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January, 1912 Volume LII. No. 1

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AMERICAN BEE JOURNAL

The Oldest Bee-Paper in America

ARTHUR C. MILLER

I am a native of Rhode Island, from old colonial stock of Scotch and English origin, variously mixed up with the usual compound of notables and nobodies, and, again, as usual, mostly the latter. I began my career in 1862, and have been careering ever since. Not a little of my boyhood was spent on an ancestral farm in central Vermont, and it was from an old-fashioned bee-house with its rows of box-hives and black bees that I got my first love for the little insects.

ARTHUR C. MILLER.

I was educated in private and public schools, and fitted for college, but went into business life instead, which seems now to have been a mistake. Most of the business life has been banking—a business of the followers of which Carnegie is reported to have said, "When a man is good for nothing else make a bank clerk of him."

I bought my first bee in February, 1880, and made the violent acquaintance of several of her on the first sunny day. I had no one to tell me what *not* to do, and a few books which told me of too many things *to* do, and I did 'em, or tried to when the bees didn't object too hard.

By 1890 I had begun to find I must forget some of the wonderful things I knew about them, and have been forgetting ever since. In fact, so wonderful has been the development of my forgetting that it keeps me in hot water most of the time. Ask my family.

I took a start one day towards finding out how many things were not what they were said to be. Bad business. Take my advice and don't try it. It is too mean to the other fellow. And it is worse than the drink habit, for once started one can never stop till the wheels cease to move. And such a headache!

Of late years the bee-study has been a race between the commercial and the scientific sides, with first one and then the other ahead, and just now they are running neck and neck. This sounds good so long as the family does not mix in, but, then, children always do spoil a good story for the sake of facts. Why, one of my boys says that I can never see a colony piling up a goodly store but I rush and open them *to see what ails them!* Now, what do you think of that! ARTHUR C. MILLER.

Providence, R. I.

WHEN THE BEES ARE IN THE CELLAR

There are times the hopeful bee-man is a feelin' mighty fine,
With the work of all the season comin' nicely into line;
With a storm in Old November fillin' out the seasons' plan—
When the bees are in the cellar and the honey's in the can.

* * *

There's a roarin' and a buzzin' when the hives are carried in;
But they soon become as quiet as the apples in the bin;
Then a peaceful satisfaction comes to cheer the honey-man—
When the bees are in the cellar and the honey's in the can.

* * *

There are blessings that are ours, that some others never know;
Honey-bees, and birds, and flowers, grace our pathway as we go;
And the seasons' culmination bringing rest to all the clan—
When the bees are in the cellar and the honey's in the can.

Bridgeport, Wis. HARRY LATHROP.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
117 N. Jefferson Street, Chicago, Ill.

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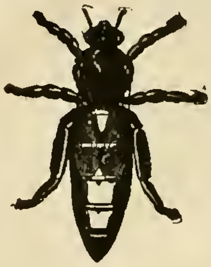

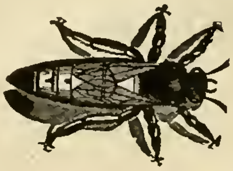

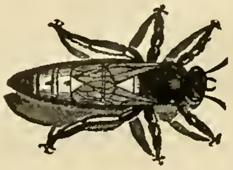

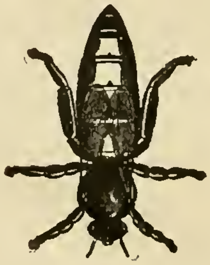

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Nemaha Co, Kan, July 15. A. W. SWAN.

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Ontario, Canada July 22 CHAS. MITCHELL

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W YORK & CO.:—The queen I received of you a few days ago came through O. K, and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. McCOLM.
Marion Co., Ill., July 13.

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J. J. Wilder, Cordele, Ga.

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BEES AND HONEY

FIRST LESSONS IN BEE-KEEPING

NEWMAN DADANT

The above is the title of a new and revised edition of what for many years was the book called "Bees and Honey," written by the late Thomas G. Newman, editor of the American Bee Journal. Mr. C. P. Dadant, whose reputation as a honey-producer and expert bee-keeper is unquestioned, revised the book recently. The last edition consisted of 160 pages, but the revised edition, hereafter to be known as "First Lessons in Bee-Keeping," contains nearly 200 pages, and is perhaps the most generously illustrated bee-book of its size now published, as it has over 150 pictures.

"First Lessons in Bee-Keeping" is principally for beginners in the bee-business, as its name indicates. It contains the foundation principles of bee-keeping—just what every beginner ought to know in order to start right with bees. It does not pretend to cover the subject in so thorough manner as do the higher-priced and larger bee-books, such as "Langstroth on the Honey-Bee," Prof. Cook's "Bee-Keepers' Guide," etc., but there are a large number of very important preliminary principles that should be well understood by every one who intends to take up bee-keeping, and this book is just the thing for that purpose.

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For the Year 1912

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I will devote more time to my bees.
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AMERICAN
BEE JOURNAL
L. L. LANGSTROTH
CHAS. DADANT

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor.
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., JANUARY, 1912

Vol. LII---No. 1

EDITORIAL COMMENTS

Incorrect Branding of Honey

Every now and then some one is anxious about the matter of labeling his honey. He seems to think there is something complicated and hard to understand about complying with the requirements of the pure-food law. It is exceedingly simple. There is no law against selling a mixture that is half honey and half glucose, or for that matter that is all glucose or all sorghum molasses. But *if* such mixture be labeled *honey* there is likely to be trouble if the product is shipped from one State to another, so as to come under the United States pure-food law, or if it be sold in any State with pure-food laws corresponding with the United States laws. The only point to keep in mind is that *the label must tell the truth*. The law does not compel a label, but if a label be used, *it must tell the truth*. Also, it must tell the truth about the weight if it tells anything about the weight. Even if the weight falls a very trifle short of that printed on the label, the seller is criminally liable.

Here is a concrete instance in which a shortage of about a fourth of an ounce in a half-pound package brought a fine. The following has been issued by the United States Department of Agriculture:

MISBRANDING OF HONEY.

On May 13, 1911, the United States Attorney for the Southern District of Iowa, acting upon the report by the Secretary of Agriculture, filed information in the District Court of the United States for said district against Albert A. Deiser & Co., a corporation, alleging shipment by it, in violation of the Food and Drugs Act, on June 15, 1910, and Nov. 14, 1810, from the State of Iowa into the State of Nebraska, of a quantity of honey which was misbranded. The product was labeled: "Mrs. Morrison's Brand Pure Food Products Honey Net Weight 8 ounces. Prepared by A. A. Deiser & Company, Des Moines, Iowa."

Examination made by the Bureau of Chemistry of the United States Department of Agriculture, of two packages of this product taken from the shipment of June 15, 1910, showed an average shortage of 4.86 percent in weight. An examination of six packages by said Bureau from the shipment of Nov. 14, 1910, showed an everage shortage in weight of 3.45 percent. Misbranding was alleged for the reason that the weight of the product was not plainly and correctly stated on the outside of the package.

On May 22, 1911, the defendant pleaded guilty, and was finded $10 and costs.

W. M. HAYS,
Acting Secretary of Agriculture.
Washington, D. C., Sept. 18, 1911.

Salt and Vinegar in Syrup

When feeding syrup for winter, Editor Herrod advises in the British Bee Journal:

> Salt and vinegar should be added to the syrup; the majority of bee-keepers neglect to put in these two ingredients, either because it is too much trouble or they imagine they are of no use. Salt is necessary for bees just as much as it is for human beings, and if they can not obtain it in any other way, they will get it from objectionable sources, such as the liquid from manure heaps. Vinegar prevents granulation, and when the syrup is boiled in no case should it be omitted.

Putting salt in syrup will probably be new to most bee-keepers on this side, but coming from such good authority the advice is worth considering.

Honey Gathered by a Colony

How much honey does a colony of bees gather? If a written answer to that question were required from a large number of bee-keepers, no doubt the answers would vary greatly. It is not unlikely that quite a number of answers would run something like this:

"A colony of bees must gather during the season enough honey to carry it through the winter, and the balance goes to the bee-keeper as surplus. It takes about 30 pounds for winter, and if the bee-keeper gets a surplus of 100 pounds then the colony must gather altogether 130 pounds."

It does not occur to the one who makes such an answer that bees must have something to live on through the summer as well as through the winter, and that while actively at work they will need a good deal more to support them than while in a condition almost dormant. The amount of honey consumed by a colony of bees in the course of a year has been variously estimated at from 200 to 400 pounds. According to that, if a colony gives a surplus of 100 pounds, the total amount of its gathering for the season must be somewhere from 200 to 500 pounds.

In any case, the amount of work done by a colony of bees each season is probably a good deal more than it gets credit for. In a season when no surplus is taken, it is not fair to say, "The bees have done nothing this year." If they have gathered enough for their own stores, they have still done by far the larger part of what they would do in the most prosperous year.

Size of Virgin and Laying Queen

Every now and then some one expresses the belief that a virgin queen may go through a perforation of an excluder through which she can not pass after she becomes a laying queen. Certainly the laying queen looks larger, and she is larger, than she was during her virginity. But the increase in size is in the abdomen, not in the thorax. The thorax, the part next to the head, is the same in size after she begins to lay as it was when she was a virgin. The abdomen—the hinder part—contains the eggs, and it increases greatly in size when the queen is in full laying, shrinking in size again when she stops laying.

The thorax is hard and unyielding; the abdomen is soft and yielding. If a slot in a queen-excluder is large enough to allow the thorax to pass, there is no trouble about the abdomen getting through. No matter how large the abdomen, its yielding softness allows it to flatten out and pass through. So if the passage of a queen through an excluder depends upon the size of the thorax, and if the thorax of a queen remains the same in size that it was when she was a virgin, it follows clearly that an excluder which allows a virgin to pass will still allow her to

JAN 27 1914

pass after she begins laying. In other words, a laying queen can get through any excluder she could get through when a virgin.

When queen-excluders were more in the experimental stage than at the present time, the slots were made of different sizes; and some of them were so large that there was more or less trouble with queens getting through. Now some one who had experience at that time may say, "You must be mistaken about laying queens being as small about the thorax as virgins. I had a number of virgins go through the perforated zinc, but never a laying queen." And he speaks very truly. That, however, does not militate with the fact that a laying queen *can* go through any slot through which she could pass when a virgin. A virgin will make frantic efforts to get through an excluder, crowding against the zinc with all her might. The writer has found more than one virgin dead with her thorax wedged tight in the zinc. A laying queen is more prudent, and when she finds it too much of a pinch to get through she gives up the effort. At the entrance of a hive containing a virgin, put perforated zinc through which she can just force her way, and when ready for her wedding-flight she will not be long in getting through. Now put an excluder on the hive with perforations of the same size, and over this a super, and the queen will not go up to lay in the super. Possibly, however, she might pass through the same perforation at the entrance of the hive in the excitement.

Drone-Foundation for a Swarm

In the British Bee Journal the question is asked what a strong early swarm with a young laying queen would do if hived in a hive containing full sheets of drone-foundation. The following reply is given:

> If you try the experiment as we have done you will find the bees will either tear down the foundation and build worker-cells, or they will build worker-cells upon the drone-base foundation.

Has any one of our readers had a like experience? It seems a little difficult to imagine how the bees would manage to fill out an entire frame with worker-comb if it is filled with drone-foundation. The base would have to be entirely changed. There is still another alternative that the bees might select, as they did in a case in this locality, in which a swarm was hived, not upon drone-foundation, but upon drone-comb. The bees would have none of it, and swarmed out.

Introducing Virgin Queens

Julian E. Lockwood says in the British Bee Journal:

> I wanted to requeen an English colony with supers on) with a young virgin Italian queen. About mid-day, when the bees were flying well, the virgin was put into a tubular cage of perforated zinc, and after having smoked the bees well at the entrance, she was allowed to run in from the alighting-board. Before running her in, she was kept quite alone and without food for 30 minutes. About evening the old queen was found cast out, and in 4 days the colony was examined, and the newly-inserted virgin found to be laying freely.
>
> In the second case, my experiment was carried out with a colony that swarmed. After cutting out as many queen-cells as I required for queen-rearing purposes, a young virgin was kept quite alone, and without food for 30 minutes, and then allowed to run down from one corner on the top of the frames. On examining the colony a few days afterwards, this queen was also laying freely, and the queen-cells left in the hive destroyed. Not only did this stop further swarming, but the colony went ahead so rapidly that they came up into the supers again and at once got to work. Whether the above methods would always work successfully I am unable to say, but I hope to test further next season.

The probability is that the plan might work always in the second case, but hardly in the first. Something would depend upon the character of the queen to be superseded. If the queen were old, or lacking in any way, so that the bees of their own accord might soon supersede her, there ought to be good prospect of success; otherwise not. If the virgin were not more than perhaps 10 hours old, no precaution would be needed. She would most likely be received kindly in any colony. But she would likely be killed before many days older if the reigning queen were young and vigorous.

Bee-Lice in New York State

The bee-louse, or braula coeca, has been known in Europe for many years, and has been found in this country on queens imported from Europe. But it has never seemed to thrive here, and has always disappeared of its own accord. Now, however, Rev. Geo. W. Fuller reports in the Bee-Keepers' Review that one day he saw a bee acting queer, running around over the comb, keeling over, pawing at her head and thorax, trying to sting everything about her, while the other bees were trying to pull something from her back. Close examination showed several parasites upon her, likely the braula coeca, and from one to eight lice were found on each of a number of other bees. Fortunately, even if this louse gets a successful foothold here, it is nothing to be so greatly dreaded. It does not, as some have supposed, suck its living from the bee, but is merely a table companion, lodging on the back of the bee and coming down over the bee's head to reach the honey the bee is eating, and dodging quickly back to its place.

Carbolic Acid in the Apiary

We are very likely to speak of women in not the most complimentary way as beings who blindly follow fashion merely because it is the fashion. Are not bee-keepers inclined quite a bit in the same direction? Take carbolic acid as an illustration. In England it has been much in use for many years. In this country scarcely at all. Is there any reason why it is not just as good a thing in this country as in England? Is it not merely a matter of fashion? We do not use it here because it is not the fashion. Sometimes, however, an imported fashion may be a good thing. At any rate, there seems to be lately instances in which carbolic acid has been used in this country to good advantage, not as our British brethren use it, in place of smoke, but rather in unusual cases in place of smoke in regular daily work, as in driving bees through an excluder to find a queen, or as a means of keeping robber-bees away. An instance of the latter kind is given in Gleanings in Bee Culture by J. E. Crane. He went to a yard of some 35 colonies, to inspect them. It was at a time when robber-bees were bad. Mr. Crane says:

> We worked leisurely, examining every hive carefully, and, when through, there were very few bees lurking suspiciously about the hives. I had with me a 10-percent solution of carbolic acid and an atomizer. Before opening a hive I would sprinkle a little of the acid on the front of the hive and about the entrance, or, more frequently, 2 or 3 at a time. Possibly a much weaker solution would do just as well, although I am not certain. Now, I would not say that, if the acid had not been used, there would have been high-handed robbery; but it was an occasion where, if ever, we would expect it.

It would be interesting to learn whether any readers in this country have tried using carbolic acid in regular work to subdue bees, to the exclusion of the smoker; also in driving bees out of supers of honey. If they have, will they kindly report with what success?

European Foul Brood

> Dr. Miller reports: "In the season of 1911, foul brood showed itself in 41 colonies out of my 116." I told you so, Doctor! Youthful as ever, in spite of his "Fifty Years Among the Bees," he takes an optimistic view of matters and congratulates himself "that in most of the hives there were only a few cells." A hive with disease in one cell *is diseased!*—D. M. MACDONALD, in *British Bee Journal.*

I wish I knew, my good Scotch friend, exactly what that "told you so" refers to. It hardly can mean that you supposed I had thought that I was forever rid of my unwelcome visitor, especially as it still has the opportunity of coming as it did in the first place—from outside. Then for some reason it seems that European foul brood is more apt to appear than American foul brood.

Possibly if that "told you so" be fully expanded it will read something like this: "I told you that if you depended upon any variation of the Alexander treatment, and did not take away all the old combs, you might rely upon a good deal more trouble than if you shook the bees upon foundation." Maybe so. And—maybe not.

Even supposing there was no chance for reinfection from outside, it is probably a fact that the McEvoy treatment does not leave the same permanent results with European foul brood as it does with American foul brood. Indeed, in general, there is too much likelihood that those who are not familiar with both diseases are inclined to think of them as being much more alike than they really are. In some respects the American is the more troublesome of the two, in some respects the European.

In my first year of battling with European foul brood, the treatment was nearly altogether by brushing the bees upon foundation. The proportion of those thus treated, and which had the disease the next year, to those which remained cured was 11 to 36. Along with that was the fact that the treatment killed 6 colonies; that is, they deserted. That made 17 failures to 36 successes—nearly half as many failures as successes. Of course, I don't know how many of those which were bad the next year were freshly infected from outside, any more than I do of the "I-told-you-so" ones of last year.

"A hive with disease in one cell *is diseased.*" Y-es, so it is; but there's a big difference between having only one cell and having all the combs rotten with the disease. Besides—and possibly this is something you don't know as well as you might—it makes a very big difference whether that one cell is affected with one disease or the other. With the American variety I shouldn't have so very much choice between one cell and a thousand, for I should feel pretty sure it would not be so very long before the one cell would be a thousand; but with the European variety in a strong colony I should generally expect the one to become a zero. Referring to the records of that first and worst year, I find there were 25 cases in which the number of diseased cells were so few that no treatment was given. Only one of these showed any disease the following year. So when the bees of their own accord clean up 96 percent of the very mild cases, "A hive with disease in one cell *is diseased*" loses most of its force. But if there were 25 one-cell cases of the American, and the bees were left to themselves, instead of finding 96 percent of the cases cured, I should expect to find about 100 percent of them growing worse.

Now, if I've wrongly interpreted your told-you-so, please tell me so again. C. C. M.

People Whom Bees Will Not Sting

Every now and then one is told of some one who can handle bees without veil, gloves, or smoke, the bees making no offer to sting such a person, although other persons may be severely stung at the same time. The bee-keeper who is told of such sting-proof people generally smiles quietly, without taking the pains to contradict such statements, considering the whole thing as an innocent delusion. But is there no foundation for such a belief? Is it not true that it sometimes happens that bees discriminate, stinging one person worse than another? And if there be such difference, may not that difference be so great in some cases that one person will be severely stung while another by his side goes scot-free?

At any rate, so good an authority as G. M. Doolittle says in Gleanings in Bee Culture:

> "There are a few men in the world who, for some unaccountable reasons, seem to be sting-proof. Others can not come near bees without being stung."

And then, by way of substantiating his belief, he relates the following:

> "An old neighbor of ours, who kept bees when I was a little boy, boasted that he was never stung by bees, and I could hardly believe him. When I had been in the business 4 or 5 years, he came into the apiary as I was taking off box-honey just after the basswood bloom, at a time when bees are generally inclined to resent being molested. The man who worked the farm was with me, well bundled up. This sting-proof neighbor was then over 80 years old; and as he came walking in among the hives, this man shouted to him that the bees would sting him. The old man said, as I had heard him many times before, 'Bees never sting me.' Just about the time he came near us I happened (?) to drop a wide frame of sections on the frames below, and did not resort to the smoker. A cloud of angry bees arose in the air, and soon the bundled-up man was beating a hasty retreat, which caused the old man to laugh. I would willingly have followed, but I wished to put my neighbor to a test. As I saw no bees looking at him, I requested him to hold a frame of partly-filled sections while I did some reaching down into the hive. In doing this, I drew the next wide frame of sections up past another which was covered with bees so as to mangle and kill scores of the little fellows, making the air so full of the vicious bees that I was getting a most unmerciful stinging on my hands and through my clothing.
>
> "I now looked at him, standing there bolt upright, holding that wide frame of sections, with not a bee hovering about him, any more than they were about a fence-post standing near.
>
> "I now took the sections from him and closed the hive about as quickly as possible, but not on his account. As we walked out of the apiary my clothes were full of hissing bees, with a swarm of angry ones about my head, while not a bee had looked at him."

MISCELLANEOUS NEWS ITEMS

Death of J. B. Hall.—On Nov. 13, 1911, there passed away at his home at Woodstock, Ontario, Canada, one of the most prominent bee-keepers of that country. His name was J. B. Hall. Many years ago he was called the "Comb-Honey King" of Canada. We had the pleasure of meeting Mr. Hall many years ago at the meeting of the National Bee-Keepers' Association in Toronto. He was a delightful man to meet, and also a splendid gentleman in every way.

◆

Death of James Heddon.—We notice by a local newspaper that James Heddon, of Dowagiac, Mich., died Dec. 7, 1911, of paralysis. About 30 years ago Mr. Heddon was one of the most prominent bee-keepers and apicultural writers in America. In later years he was not very much interested in bee-keeping. He was the originator of artificial fish-bait, and an authority on fish. The newspaper item enumerated 14 different occupations in which Mr. Heddon had been engaged at different times during his life, which shows he was a most versatile man. The item also says that "he died wealthy."

◆

The Chicago-Northwestern Convention.—The 32d annual meeting of the Chicago-Northwestern Bee-Keepers' Association was held Dec. 6 and 7, 1911, in the Great Northern Hotel, which furnished free of charge the finest hall that this, or perhaps any other convention, has ever been permitted to meet in.

The convention was one of the best held in a long time. Among the prominent convention people who were present were Dr. C. C. Miller, Miss Emma M. Wilson, N. E. France, C. P. Dadant, Jas. A. Stone, M. M. Baldridge, Gus Dittmer and Jacob Huffman. The proeeedings were taken down in shorthand, and will appear in the 11th Annual Report of the Illinois State Bee-Keepers' Association, which will probably be issued before April 1, 1912. The topics which were discussed were numerous and most interesting.

Louis C. Dadant, the secretary, was elected a delegate to the next meeting of the National Bee-Keepers' Association.

The officers elected for the ensuing year are as follows: President, George W. York; Vice-President, Jacob Huffman, of Wisconsin; and Secretary-Treasurer, Louis C. Dadant, of Hamilton, Ill.

◆

To Bee-Convention Secretaries.—We are always glad to publish notices of future conventions of bee-keepers, but it so often happens that we receive such notices *too late* to publish them. We should always have notices 40 days before the meeting, in order to insure their appearance in the columns of the American Bee Journal.

For instance, we received a notice of a meeting of the Northern California Bee-Keepers' Association for Dec. 27 and 28, 1911, *just after* the December number was printed. We should have had it at least a week or two before the time it arrived in our office.

We would like very much to cooperate with the officers of all the bee-keepers' associations, especially through publishing their announcements of meetings, but unless they arrive in time to be of any use when published, it is a waste of space to print them.

We hope that all secretaries will kindly take note of this matter, and in the future be sure to send their notices so that their publication will be of service to the membership of their associations.

◆

National Legislative Committee.—One member of this Committee was appointed at the Minneapolis convention of the National Bee-Keepers' Association—Wm. A. Selser, of Philadelphia, who was authorized to select two other members to act with him on the Committee. The two members selected are J. H. M. Cook, of New York City, and N. W. Saunders, of Rockville, Md.

As there is frequently much of importance arising at Washington, D. C., that would be of interest to the bee-keepers all over the country, it was deemed advisable at the Minneapolis convention to keep a standing Legislative Committee. The wisdom of this move is already being shown, for the Committee met in Washington, D. C., recently, and had an interview with Hon. James Wilson, Secretary of Agriculture, Dec. 12th, which, it seems to us, will be far-reaching in its good effects. In fact, there could hardly be any better effort of the National Bee-Keepers' Association than that this Committee manage to carry on a campaign of education, enlightening the bee-keepers throughout the whole country as to foul brood and other matters of importance to them. The following is a copy of a letter addressed by the Committee to Secretary Wilson, which was in line with his suggestions to them:

> Washington, D. C., Dec. 13, 1911.
>
> Hon. Jas. Wilson,
> Sec. of Agriculture, Washington, D. C.
>
> *Honored Sir:*—In response to your request of the Legislative Committee of the National Bee-Keepers' Association, that visited you on the 12th inst., that we repeat in writing our request, that you so kindly promised to do what you could to aid us in. In view of the fact that the various States are not issuing bulletins and disseminating knowledge on the subject it becomes necessary for us to make the special appeal to the Federal Government.
>
> 1st. That you instruct your Department to send the Farmers' Bulletin, 442, on Foul Brood, to every farmer who keeps bees in the United States, there being a decrease, largely on account of this disease, of nearly a million hives of bees since last census; that the danger of spread in healthy locations makes it necessary to have every bee-keeper informed of the symptoms, and the treatment of the disease.
>
> 2d. That you also instruct your Department to issue a statement to all county papers, warning the bee-keepers of the danger of the disease, and that they could have a bulletin for the asking, that would be helpful to them, as well as their neighbor bee-keepers.
>
> 3d. That your Department be allowed to send out an advance card to the bee-keepers, enlightening them as to the nature of the disease, and the bulletin published.
>
> 4th. That your department issue a farmers' bulletin, stating the relation of bees to horticulture, and the danger of spraying fruit-trees while in bloom, as being fatal to the bees, which are so essential to them.
>
> 5th. That your Department issue a farmers' bulletin, giving the nutritious value of honey as a food, and some recipes as to its present unknown uses in food preparation, as very helpful to the citizens of the United States in general.
>
> As the Committee understands it, the first, second and third were in the form of a request, of which the first you held under advisement. The second and third you agree to acquiesce to our request.
>
> The fourth and fifth were only in the form of a suggestion, and you felt also, with us, that such bulletins would be very helpful, and you approved the same.
>
> The Committee desires to thank you for your courteous audience given them yesterday, and reiterates the gratitude they feel toward your Department, in the many ways you have helped us along the lines of the bee-industry.
>
> Wm. A. Selser., Philadelphia, Chm.
> J. H. M. Cook, New York, N. Y.
> N. W. Saunders, Rockville, Md.
> *Committee.*

Surely the foregoing is a big step in the right direction. If even half of what is suggested by the Committee be carried out, it is bound to be of great benefit to the bee-keeping industry, and also shows the value of organization. If, during the coming year, the new Board of Directors of the National can continue such important work as the Legislative Committee has initiated, there will be "something doing" in beedom through the National Association. It will indeed be worth while to be a member of such an organization when it makes progress in the way the above Committee has begun. Let us all hope that this year may be a memorable one because of the advancement made by the National Bee-Keepers' Association in the interest not only of its members, but of bee-keepers everywhere.

The Legislative Committee also passed a resolution asking that the National Association meet in annual convention in Washington, D. C., this year. They feel they can better use the "committee as a whole" to further interests of legislation than in any other way.

As the new Constitution of the National provides for the annual meeting in February, it is just possible that there will be no regular convention of the National during this year, as the time is really too short to prepare for a meeting, elect delegates, etc., so as to have the annual meeting next month. So it may be that the first real convention under the new Constitution can not be held until February, 1913. However, it is just possible that a National meeting of some kind will be held during this year. The new Board of Directors *may* arrange for such a meeting. Of course, we have no authority for making these statements, but *thought* perhaps something of the kind *might* be done.

◆

Cuba vs. Colorado for Honey.—Wesley Foster says in Gleanings in Bee Culture:

> The most successful bee-keepers in Colorado are averaging only 40 to 60 pounds of extracted honey, and 25 to 35 pounds of comb honey. They make up on the number of bees operated. There are about 25 bee-keepers in Colorado who operate more than 500 colonies each; four or five who have over 1000 colonies, and one or two who have over 2000.

In the same number D. W. Miller, writing about bee-keeping in Cuba, says:

> About what is the average yield of extracted honey per colony per year in the cold countries? We figure 30 gallons here—the lowest I know about being 15 and the best 45. Unless all signs fail, this will be a good year for us.

If we estimate honey at 12 pounds to the gallon, that makes the average yield in Cuba 360 pounds; the lowest 180 pounds; and the best 540 pounds. If the general average in Cuba is 360 pounds, and the most successful bee-keepers in Colorado average only 40 to 60 pounds—say 50 pounds—it would be interesting to learn why a man of Mr. Foster's ability should remain in Colorado instead of going to Cuba, where he could average more than seven times as much honey. Surely the price is not seven times as great in Colorado as in Cuba. Social conditions might make a great difference; but even at that, why not go to Cnba to make his pile and then return to Colorado to enjoy it?

◆

Finding Queens with Carbolic Acid.—Geo. H. Redford gives in Gleanings in Bee Culture the following plan for finding queens, which, for those who have many queens to find, may prove a saving of time and labor:

> Make a crate of 1x2-inch lumber, same dimensions as the hive-body. On the four sides tack wire-cloth, and on the bottom queen-excluding zinc. For the top, make a frame of inch stuff, of the same size as the top of the hive (or crate), and tack on wire-cloth. Next, remove the cover from the hive to be searched; take out two combs, and after shaking or brushing the bees back into the hive place the combs in the wire crate and put on the wood-bound wire-cloth cover, and place the crate on top of the hive. Put 3 or 4 drops of carbolic acid in the smoker on top of the fuel; light it and smoke at the hive-entrance. Immediately the bees will rush up through the excluder into the wire-cloth fresh-air chamber. When they are about all up (which takes less time than to write it) the queen will be found under the excluder after tilting up the wire crate. If she is not detected at once, glance on top of the frames, and, falling to find her there, the frames can be taken out and examined quickly, as they are practically clear of bees. However, it will be seldom that the queen is not discovered trying her best to get through the zinc, and possibly wishing she could return to her original virgin slimness.
>
> The beauty of this method is, first, that It requires very little labor. Second, there is but small chance for robbers to work, even without a tent; and, third, by using wire-cloth on the sides the bees are kept out of the way of the operator. It was found easier to drive them up than down; and the fumes, naturally rising, were more effective than smoking downward.
>
> At first I used an ordinary hive-body with zinc on the bottom and wire on top; but with a strong colony the bees covered the wire on top, preventing the smoke from escaping; and since it was stronger there than lower down, they ran back to the frames. With wire on top and sides, the air is comparatively fresh on top, and there they will cluster.
>
> The crate should be nailed rather strong; for after finding the queen the wire top is lifted off, and the crate turned upside down and given a bump on the ground in front of the hive, and it is ready for the next.
>
> A note of caution should be sounded regarding the amount of carbolic acid to be dropped into the smoke. Just enough to give a rather rank odor should be used—usually 3 or 4 drops, according to strength. Too much is liable to kill very young brood.

◆

Fastening an Extractor.—Unless a honey-extractor be fastened very firmly to the floor it shakes in an unpleasant manner. The trouble is that the wobbling is at the top, while the fastening is at the bottom. Leon C. Wheeler tells in the Bee-Keepers' Review how he overcomes the difficulty. Two braces run from the top of the extractor to the ceiling. To make them more effective, they are about twice as far apart at the top as at the bottom.

◆

"Keep Bees Better!"—P. C. Chadwick says this in Gleanings in Bee Culture:

> Friend Hutchinson said, "Keep more bees." Dr. Miller says, "Keep better bees." It might be well to add a third bit of advice, "Keep bees better."

Why not "keep better more better bees?" That's the thing to do.

◆

"I Don't Know."—A man once asked the editor of that most beautiful monthly publication called "Better Fruit," to what one thing he mostly attributed his reputation. His answer was this: "By being able to say 'I don't know.'"

That reminds us very much of Dr. Miller—the "sage of Marengo"—who has used those three words a good many times during the past 40 or 50 years. When one really doesn't know it is much better to say "I don't know" than to pretend to know, for sooner or later the pretense will be discovered, and then he finds he has made the reputation of an entirely different sort from the kind that is most desirable.

◆

Fastening Foundation in Frames.—Complaints have been made that fastening foundation in frames with wedges was not always reliable. The wedges sometimes loosen, and down comes the foundation. No one seemed to know just how to remedy this.

Stephen Anthony, a New Zealand subscriber, has a little son. This little son has a sheep-puppy. This boy put the sheep-puppy to bed one night in a shed where the father was nailing frames. The puppy didn't sleep all night, but turned loose on those frames. Among the things used for his midnight lunch was a bundle of wedges. They were short lengths the next morning.

Now it was found that by using these short pieces the wedges did not fall out, so Mr. Anthony now cuts all his wedges in three pieces, using but two for each frame, starting about three-fourths of an inch from each end, and the trouble of falling foundation is done away with. Let us extend a vote of thanks to the puppy.—*Bee-Keepers' Review.*

National Directors' Meeting.—A meeting of the new Board of Directors of the National Bee-Keepers' Association has been called for Jan. 23 and 24, 1912, at Detroit, Mich. It is hoped that there will be a full attendance of the Board, as they will have many very important matters to consider relating to the future progress of the Association. The new Constitution, which was adopted in November, to take effect Jan. 1, 1912, necessitates quite a number of changes in the plans and operations of the National Association. The new Board of Directors surely will have large responsibility which will require the exercise of much care and good judgment in order to bring about the improvements in the Association that are needed.

We hope next month to publish a report of this very important meeting of the Directors, so that all our readers will know just what is proposed along advanced lines of work to be undertaken by the Association.

Oklahoma Bee-Keepers' Convention.—The next annual meeting of the Oklahoma Bee-Keepers' Association will be held at Stillwater, Okla., at the A. & M. College. On Wednesday night, Jan. 17, 1912, an address illustrated with moving pictures and lantern-slides will be given by Prof. C. E. Seaborn. The next day the convention will be continued. Among the papers to be read are the following: "How Location and Pasturage Affect Successful Bee-Keeping," by D. H. Burrage; "Why We Should Tie to the Association," by Geo. H. Coulson; "The Use of Feeders," by G. E. Lemon; "What I Think of Foul Brood," by Arthur Rhoads; "Growth of the Bee-Industry in Oklahoma," by F. W. Van De Mark. There will be a question-box and discussions also. All bee-keepers who can possibly attend are cordially invited.

South African Bee Journal.—This office is in receipt of the first number of the first volume of the South African Bee-Keepers' Journal. In typographical appearance it strongly resembles an Australian publication. The editor is Mr. G. S. Oettle, and it is published by the South African Bee-Keepers' Association, Johannesberg, free to members of the Association and affiliated societies; 6s. 6d. to others in United South Africa, and 7s. 6d. to the rest of South Africa and to other countries in the Postal Union.

In the Hon. Secretary's report he says: "Despatching the journal to each member is no light task, for 350 South African addresses is something to strike awe into the worker, though it comes only once each month." Yet there may be nothing unkind in the wish that the number may become 3500.

He says the present price of honey in one-pound glass jars as retailed in Johannesburg and district is 2s. 6d. Half a dollar a pound for extracted honey is not so bad. But there is no competition from imported honey, as "the importation of honey from Oversea is totally prohibited."

Success to our far away cotemporary.

American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address all orders to, Geo. W. York & Co., 117 N. Jefferson St., Chicago, Ill.

"Verse for Little Folks and Others" is the appropriate title of a cloth-bound book of poems written and issued by Hon. Eugene Secor, of Forest City, Iowa, for 75 cents. We have received a copy of it from the author, and regretted very much that we did not have it in time to announce it in last month's American Bee Journal, so that it could have been used as a Christmas gift-book. It contains 36 poems, all of which are more or less illustrated with original drawings. Mr. Secor is too well known among the readers of bee-literature to need any further introduction or commendation of his superb work, either as a writer of prose or poetry.

Lost Numbers of the Bee Journal.—Occasionally we are notified that a subscriber has failed to receive one or more copies of the American Bee Journal that are due him. We are very careful to mail every monthly copy, but, of course, sometimes in the mails copies will be lost. We are always glad to replace such lost copies if subscribers will kindly notify us. Once in a while a subscriber writes as if he thought we did not mail his copy, but this is always a mistake on his part, as we mail the American Bee Journal to *all* our subscribers *each month*. There is no part of the office-work of the American Bee Journal that is more carefully looked after than that of the mailing. We are very anxious that every subscriber shall receive every copy of the American Bee Journal that is due him, and will consider it a favor if he will notify us promptly when any particular month's number has failed to appear at his post-office.

The Marshfield Mfg. Co., of Marshfield, Wis., were the first dealers in bee-supplies to send us a catalog for 1912. It arrived at this office Dec, 28th. It contains 64 pages and cover, and is very convenient in size, as it can be mailed in an ordinary envelope. The Marshfield Mfg. Co. is one of the oldest bee-supply manufacturers and dealers in this country, and have been continuous advertisers in the American Bee Journal for many years. We notice that they enclose with their catalog not only an order blank, but a printed leaflet on "Foul Brood," in which they call attention to the growing prevalence of that disease, and suggest that every one of their customers send to the Secretary of Agriculture, Washington, D. C., for a copy of Farmers' Bulletin No. 442, on "The Treatment of Bee-Diseases." This is a wise thing to do, and might well be followed by all the bee-supply dealers. It no doubt would help a great deal to put more bee-keepers on their guard concerning the wide-spread loss caused among bees by the dread disease of foul brood.

The Tennessee Convention.—The Tennessee State Bee-Keepers' Association will meet Friday, Jan. 27, 1912, beginning at 9:30 a.m., at Nashville, Tenn. The following is the program besides the usual reports, discussions, etc.:

"Spring Management of the Apiary," by B. G. Davis.
"European Foul Brood," by Porter Ward, of Kentucky.
"American Foul Brood," by J. M. Buchanan.
"Making Increase," by David Wauford.
"Organization and Co-operation," by W. H. Lawrence.
"Modern Methods of Bee-Keeping," (illustrated lecture), by J. S. Ward.

Dr. E. F. Phillips, Expert in Apiculture of the United States Department of Agriculture, Washington, D. C., will also deliver an address.

Every bee-keeper in Tennessee, as well as adjoining States, is invited to this meeting. For any further information, address J. M. Buchanan, Franklin, Tenn., secretary of the Association.

New York State Convention.—The New York State Bee-Keepers' Association will meet Jan. 30 and 31, 1912, in the Onondaga County Court House at Syracuse, N. Y. Every bee-keeper is invited to be present. Its secretary, Dr. C. G. Schamu, says that "it is going to be a bee-keepers' meeting such as they never attended before," and asked us to "emphasize this point." We hope that it may prove to be all that the good Doctor anticipates. For any further information, including a copy of the program, address Dr. C. G. Schamu, Liverpool, N. Y.

Mr. M. C. Richter, of California, has left for the South American port of Valparaiso, Chile. Mr. Richter is an able writer and authority on bees. He will go into bee-keeping extensively in his new location. We shall hope to hear from him after he is well started.

"Bees and Honey"—the book by Thos. G. Newman—is almost out of print, but we have a few copies left (cloth bound) at 50 cents each. Do you want one? Address the office of the American Bee Journal.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Alley Plan of Queen-Rearing

A. Beatrice Bambaut describes in the Irish Bee Journal the Swarthmore plan of queen-rearing. Then she quotes from a friend in America who prefers the Alley plan, the quotation ending with these words:

> "I fear you will have to remain by them for 24 hours when they are hatching, as the first one to hatch kills all the others if she gets a chance."

The writer then says:

> "I confess I prefer Mr. Swarthmore's plan to that of my friend, for enthusiastic as I am, I fear that to sit all day and all night by the side of my hive, would be too much for my patience, besides which I would certainly be thought by my neighbors to be mad sa the proverbial hatter or March hare."

Now what an idea. Did any one who used the Alley plan ever sit by the hive for 24 hours, watching the young queens as they emerged? And if he did, what could he do with them except to put them in nuclei, cages, or nurseries? And this he could do just as well with the ripe cells, and then go take a good night's sleep.

Bee-Lice and Queens

Most women bee-keepers are familiar with poultry-lice—more so probably than their associates of the other sex—but very few in this country have ever seen a bee-louse, or braula coeca, as it is called. In Europe these lice are only too plenty. However, they are not so bad as chicken-lice, for they do not suck the blood of the bees, but are called "table companions," for they come down to take a lunch of honey whenever the bee partakes, and then scurry back to their place on the bee. They are found more plentifully on the queen than on the workers, and Marie Pitter says in a German bee-journal that she has known more than a hundred on a single queen, and she thinks this shortens the life of the queen. So far, the bee-louse has never flourished in this country, but something of the kind has been reported in the State of New York, so it will do no harm to be on the lookout, especially on imported queens.

Requeening "in America"

In the Irish Bee Journal, A. Beatrice Bambaut says:

> "In America, where honey is stored by the ton, instead of by the pound, the question of breeding queens is considered to be of the highest importance, and some bee-keepers say two queens should be supplied in a season to each hive. The queen which has supplied the spring workers is supplanted by a young queen which starts to work at the autumn supply."

Has not the sister been misinformed? If any one in this country has seriously considered it advisable to change queens twice annually in each colony, it has not been generally made known Indeed the proportion of those who replace their queens once each year is not so very large. Some of our best and most successful bee-keepers never replace a queen because of age, leaving the matter of superseding entirely to the bees. They say that a good queen will do as good work in her second year as in her first, if not better; and the third year of a good queen may be better than the first year of a poor queen. They believe, moreover, that in the majority of cases the bees will supersede a queen just as soon as it is profitable to do so. But they do believe in superseding any queen that is not satisfactory, whether she be 3 years or 3 months old.

On the other hand, there is one reason for requeening annually that has much weight. It is that a young queen is little inclined to swarming. And for the sake of the prevention of swarming it may be advisable for some to cut off a queen in the midst of a useful career. But it would be a difficult thing to do much in the way of improvement of stock if *all* queens were killed at the end of their first year.

The Lesson of the Bees

Sometimes when I get a-moping,
  And things all seem going wrong,
That is when my thoughts go loping
  Off to join the busy throng;

And my body fain would follow
  Where my thoughts have taken wing,
To the life as vain and hollow,
  That would often mis'ry bring.

Then I sit down 'mid the posies
  Under the pink-dressed apple-trees,
To think what poor man loses
  Who hears not the hum of bees!

For *they* lose no time in blaming
  Him who made the world so fair—
Not a bee does vain complaining,
  Always living on the square!

Back again to daily duties
  Go I, then, with happy heart;
More awake to Nature's beauties—
  Willing, quick, to do my part.

Oh, may you, you men of cunning,
  Learn a lesson from the bees,
As you listen to their humming
  In the fragrant-blossomed trees.

So may we find much of beauty,
  As through life a smile we wear,
Passing by all tainted booty—
  Always living on the square!

Mrs. Irma True Soper.

Jackson, Mich.

Requeening to Reduce Swarming

Miss Ethel Robson, conductor of the Woman's Department in the Canadian Bee Journal, says:

> Does requeening every year tend to reduce swarming? This is something which I should like to know. The greater proportion of my queens were reared last season, and the number of swarms this year was wonderfully small, considering the care the bees received. The clover coming on early, and being absent on Institute work, I got behind, and practically all that was done to prevent swarming was to give plenty of room. Yet, while getting a good crop of honey from my 75 colonies, considering the season, I had only some half dozen swarms.
>
> Years ago, when no requeening was practised, with much the same number of colonies, we used to have many times more swarms. The weather may have had something to do with it. A few cold days always followed the days of intense heat, and these seemed to check any rising desire to swarm. But this can not be entirely the explanation, neighbors who keep a few according to old-fashioned methods have had swarms from every colony, but here again the question is complicated, as they run mainly for comb honey. Would some one who knows about the matter be good enough to let us know what he thinks?

It is pretty certain that changing the queen of a colony will reduce the chances of swarming, always provided that the new queen be much younger than the old one. This for the simple reason that there is much less inclination to swarm with a young queen than with an old one. In this locality, with very rare exceptions, if a laying queen be replaced by a ripe queen-cell or a virgin, and the young queen succeeds to laying, that colony will not swarm before the next year. The same result will be obtained if early in the season the old queen be replaced by a young queen that has just begun laying, if the young queen gets fairly settled down to laying before there is any thought of swarming. If a young queen be given to a colony that already has the swarming fever, that colony will go right on with its swarming, even if the new queen has but just begun laying. But if the young queen be introduced a week or 10 days after the colony has been made queenless (queen-cells of course being removed), then the colony will be just as safe from swarming as would be a natural prime swarm.

Arthur C. Miller thinks that with plenty of hive-room and good ventilation a colony is practically safe from swarming that has received a young queen the previous August.

Some advocate requeening each year, and there are advantages in doing so. But if that be followed up strictly, away go your chances for much improvement of stock.

A New Dish—Tomato and Honey

Miss Wilson:—This may not be a new dish, but it is new to me:

Trim and slice sound, ripe tomatoes; put into cold water with salt and cayenne pepper to taste. Stew slowly until tender. Now break in as many fresh eggs as you had tomatoes, and stir enough to break the eggs into small chunks; put in a liberal supply of butter, and set off the stove; when somewhat cooled sweeten to taste with extracted honey, and then put in crisp crackers, and eat hot.

I have a good crop of honey again, although other bee-keepers about me have none.

I am still strong in the belief that salt will prevent and cure foul brood.

Wheeler Co., Nebr. W. H. Mills.

Thanks for the recipe, which has probably never been in print before.

Don't put too much faith in salt for foul brood.

Tomatoes and Ants.—Ants like to make their nests over the brood-chambers of hives, where it is warm, and where they are somewhat troublesome to the bees. Franz Richter says in Bienen-Vater that for years he has made a practice of driving the ants away by the use of tomato-leaves.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Improvement in Bees

The problem before the queen-breeder during the next half century will probably be very similar to that which confronted the inventors of the steam engine. The inventors could not find mechanics skillful enough to grind piston-heads so true that they would not leak steam under great pressure. One of the inventors—I can not recall his name—said that he would have to train men so they could do this most accurate work. This is our great need today in advancing bee-culture, and especially in developing a better race of bees. It is a question, not of 10 years or 20 years, but probably of 50 years and upward, before any really tangible results can be secured; and then, again, a great many of the problems to be met may be mastered much sooner.

What we need is a corps of trained men with all the time they need to carry on these queen-breeding experiments. The United States Government at the present time is carrying on horse-breeding experiments, with the view of establishing a standard horse for use in the army. Success has not been fully attained, but a great deal has already been accomplished. I would be glad to see the men interested in the breeding of better bees get together and formulate a systematic campaign. We should be able to get a score of men in the United States to make a thorough study of this question. I feel sure that many isolated locations can be easily found for the experiments. However, this field is so large that no one individual, or probably dozen individuals, could successfully carry on the work for the time necessary without the co-operation and assistance of the entire bee-keeping fraternity. We must admit that at the present time our results are practically *nil*, and that this question will have to be approached as if nothing had been achieved.

◆

Do Bees Facilitate the Fertilization of Alfalfa Honey?

A few days ago I was talking to Mr. P. K. Blinn, of Rocky Ford, Colo., alfalfa specialist for the Colorado Experiment Station. Mr. Blinn told me that he did not think the honey-bee brought about the fertilization of the alfalfa, because he had watched them working on the alfalfa a great deal, and had never seen them spring the trap to the bloom which causes the pollen to be dusted over the insect. Mr. Blinn said that he had seen one kind of wild bee spring these little traps provided by the bloom.

This is an item that would be interesting for the bee-keepers to look out for when alfalfa blooms again. I have taken the blossoms, and with but a slight touch of the finger, would release the stamens and cause the shower of pollen to be dusted into the flower. The more mature the bloom, the easier the trap is sprung, and I am of the opinion that when the blossom becomes sufficiently matured the honey-bee will spring these traps, though I have never seen this done while the bee was sucking nectar.

◆

The Italians' Resistance to Foul Brood

The statement is made (page 326, November, 1911) that the Italian bees resist foul brood because they are vigorous. I should like to know in what manner the disease is resisted. Are the young larvæ so vigorous that they can be fed infected honey without harm? Or is it because of the vigorous Italians cleaning out the dead larvæ as soon as they die? Here in our country we rarely see any black bees—our bees are mostly pure Italian. We have some Caucasians and some Carniolans, but so far as one race of bees being more resistant to foul brood than another, I have never observed it. If Italians are less liable to contract foul brood than black bees, it might be because they are less disposed to rob. I can not bring myself to believe that the larvæ of Italian bees are more vigorous and can be fed infected honey without disastrous results.

◆

Bee-Inspection

Colorado, at the present time, has 15 or 16 county bee-inspectors. During 1911 about 20,000 colonies of bees were inspected at a cost to the counties and State of nearly $2500. About 1500 colonies were found diseased, 300 of which were destroyed. Mesa county has had the most inspection work done, 240 apiaries being inspected, and almost 8000 colonies were in these apiaries, all of which were inspected twice, and some three times.

Four years ago, when Mr. Harkleroad, the inspector, began work 14 percent of the bees were found diseased. Last year less than 4 percent were found diseased, and this year less than 2 percent. There is no other county in the State where foul brood exists where the disease is so well under control.

I will have more to say about this inspection when the reports are all in for the year's work.

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A Fremont County Bee-Meeting

Monday morning, Sept. 11, Dr. Phillips and the writer reached Canon City, in Fremont county. A week of bee-meetings on the Western Slope had just ended; Canon City was to be the last on Dr. Phillips Colorado itinerary. Mr. F. W. Brainard, the County Inspector, met us at the train, and although he had never met either of us, he said that he had studied my photo in Ranch and Range, and felt safe in picking out the blackest headed man who stepped off the train. Mr. Brainard is a bee-keeper and fruit-grower. He owns and operates between 100 and 200 colonies, and has done excellent work as an inspector. He considers it an inspector's duty to instruct the bee-keepers in the care of foul brood, and also to bring the fruit-men to a realization of the bees' mission to the fruit industry.

Mr. Brainard has had some very interesting experiences in stopping spraying during fruit-bloom. He has taken the agitation up on the floor of the fruit-growers' meetings, and has also gone out in the orchards when he heard that any one was spraying before the falling of the petals.

Fremont county is one of the largest fruit counties of the State, having shipped over 1000 cars of apples during the past season. The bee-keepers of the county are a most enthusiastic lot—keenness for the most modern methods of production being shown by the larger number. There are in the neighborhood of 150 bee-keepers in the county.

Our visit happened to be right in the rush season of the year, so that only about 15 were out to the meeting. We met in Mr. Babberger's photograph studio, Mr. Babberger being also a most enthusiastic owner of about 70 colonies of bees. This combination of "artistic" pursuits was the cause of an amusing incident which occurred during the greetings and introductions of the gathering brother bee-keepers. One gentleman appearing at the door who was seized and introduced to the company, bore a slightly puzzled expression, and when asked where his bees were located, replied that he kept no bees, but had come in to see about photographs!

Mr. Babberger had a beautiful display of comb honey in tall plain sections, arranged as indicative of his twin pursuits, though the other bee-keepers did not seem to favor the preference shown for the Danzenbaker hive and tall section.

Dr. Phillips told of the methods of treating foul brood, and discussion of the various phases of the foul-brood situation was continued for over an hour.

The price of honey in Fremont county has not been good on account of the large number of small producers who bring in the honey in almost any shape and accept in trade what the grocer will allow. Those present discussed the price situation, and came to a better understanding of what should be a uniform price. Several had received very satisfactory returns from honey consigned to Denver commission houses.

The foul brood situation in Fremont county is in rather poor shape. Mr. Brainard has inspected something over a hundred apiaries, and has found over 200 colonies diseased out of about 1000 inspected. If Mr. Brainard had been inspector there for several years past, conditions would be different.

After our meeting, Mr. Brainard took Dr. Phillips and myself out for a ride over the High Line drive. This is a scenic road built by convict labor from the State Penitentiary, located in Canon City. The road loops back and forth up the side of a "hog back" till it reaches the summit, between 500 and 700 feet above the town. Then it follows right along the summit, giving us a delightful panoramic view of the mountains to the west and the valley to the east. The town lies at the foot of the "hog back," and Lincoln Park lying directly to the south, is a district the most solidly set to fruit I have ever seen. It is made up, practically altogether, of 5 and 10 acre fruit-farms, and probably comprises several thousand acres.

The descent from the "hog back" follows down on the side toward the valley and the town; and while the road is steep, carriages and automobiles make the trip safely. This scenic roadway has been a great advertisement for Canon City, and is an example of the work of Warden Tynan in letting out the prisoners in large numbers on their honor.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Is Bee-Keeping Worth While?

Of all the questions asked relative to bee-culture perhaps none exceed the above in greatness and the most often asked. At least it has come to me oftenest, and I can more readily answer any other question than this one, because it involves so much—(a human being and his situation that I don't know anything about).

Location may be a matter of some consideration, but this is not often the case, for there are not so many locations in Dixie where bees would not do well. So it is mostly the man and his situation.

There are a lot of men who have the ability to succeed at bee-keeping, but other things intervene, and they can not make a success at it until there is a change in their situation. But would it pay to make a change? Sometimes yes, and sometimes no.

When does it pay to shift from another line of business to bee-keeping? When a man fully realizes from actual experience that he is out of his calling in life, and he has experienced enough of bee-keeping to know that he is talented for it; and would he like it as an occupation, or as a side-issue, as the case may be? for some people seem to have talents for more than one line of business, and can carry on more than one with success.

But what about the man who has not the experience in bee-keeping sufficient to know that his talents run in this direction? Well, he should put them to test by buying a few colonies of bees, and making them an object of study for a while, along with literature on the subject. Or if this is too expensive, take an interest in the bees of some of the neighbors (they are always glad to have interested help with their bees). If this is not sufficient, get a job with some experienced and successful bee-keeper for a few months, and obtain knowledge at his expense. That is, he will pay you for your services and will bring the talents out (if you possess any for the business), and will tell you whether you are talented or not in bee-keeping.

And above all, don't forget that if a great success is obtained, a lot of "ginger" has to be added along with experience and natural gifts.

But aside from the above, is bee-keeping worth while in a general way? Yes, it is, even followed as it is, and as badly neglected as it is, and if modern conveniences and methods were adopted, bee-keeping would be a good business all over our Southland.

"How Shall I Start With Bees?"

FRIEND WILDER:—From time to time I have seen articles in papers about bee-keeping and the large profits that could be derived from bees, if properly cared for, all over our Southland. Now, I am a little, old, poor farmer down here in North Louisiana, and think I would like bee-keeping, and I am asking your experience and advice about the business, and I hope you will take the time to tell me what you think I ought to know about it to make a success of it. I have had no experience with bees whatever. Tell me how to start the business and run it successfully, and I will thank you very much. P. F. TILLEY.

I infer from your letter that you want to engage in bee-keeping to make money thereby, and not merely to keep a few bees that you might obtain a little honey along for use. Any farmers can do this without giving bees much consideration, but when it comes to making money at bee-keeping it is a different proposition, and one we will now consider for a few moments. But first, let us consider the qualifications of a beginner who would most likely succeed at bee-keeping.

He must at least possess three essentials, viz: Inclination, energy, and will. If an individual doesn't possess these elements there is no use in trying to tell him how. It would be a total loss.

As to the "how"—in the case of a qualified beginner, all we have to do is to refer him to any of the numerous text-books printed on the subject, and there he can obtain the practical information so far as theory is concerned, and when he comes in possession of some bees he can begin to mix in some practical experience with the book-information he has obtained, and then he begins to progress.

The word "how" covers a broad field, and it takes a book to cover it. Space in a bee-paper is too limited and can only give it a little at a time, and not right straight along, then, like it should be done, so that it could best be understood, but it just skips about over the field, here a little that is helpful—now for the beginner, and yonder a heap he may not need for a year or so. So a bee-paper gives out the information too scatteringly, and can not take the place of a practical book on the subject. I never will forget how tangling or puzzling the first bee-paper I ever read. It kept my mind addled for a while, skipping from subject to subject, leading me out in so many different directions, and dropping me where I did not see my way out clearly.

Our bee-publications are helpful to the beginners, and they should subscribe for them, but when a great struggle for information is desired they can not take the place of text-books.

So much for bee-papers in the hands of beginners. Let us go back and see who is the qualified beginner, or the beginner who is sure of success.

Now, if I am not qualified to do certain work, it is a favor to me if some one will tell me so, and it will not offend me in the least. If I were to make known to some people by these few remarks that they were disqualified to make money at bee-keeping, it would be a favor to them.

First, one must be naturally inclined. I mean by this, that the honey-bee must offer him great fascination, and its nature or habits, and field of work be a very interesting study to him, and he must forever be on the alert to learn more about the bee and how to cultivate it. So the apt beginner must enter a continuous study of his bees and his bee-business to succeed.

Second, a bee-keeper must be filled with energy. He may not need so much at times, but at other times he will need all a human being can possess. He may have to sacrifice sleep and necessary rest in order to supply the needs of his bees. So, too, the apt beginner must be a "hustler."

Third, back of it all he must have a fixed and determined will to succeed. If a beginner in bee-culture is naturally inclined, and is energetic, and has his will set on success, why, there is nothing else but success for him. In other words, an apt beginner in bee-culture must be a well-rounded business man, who would likely succeed at anything he undertook to accomplish.

Now, when a beginner is qualified it matters not whether he starts with one colony of bees or 100 colonies. But the promoters of our industry advise only 4 or 5 colonies for the average beginner, and this advice should not be ignored by those who are in doubt as to their qualifications.

Keeping Bees in the North in Summer and in the South in Winter

MR. WILDER:—I would like to come South after I put my bees up for the winter here, and spend the winter down there in some place where I could find a good location for bees. I can leave here about Oct. 1st, each year, and leave down there about the latter part of April, and return here and look after my bee-interest during the season. Can I in this way keep bees at both ends of the line successfully?

I am a young man and can do the necessary

work. What do you think of the project, and how can I succeed at your end of the line? I will thank you for any information.
Cook Co., Ill. E. H. BRUNER.

It appears to me as if the project might be carried out, and with considerable success. At this end of the line you would have to run exclusively for extracted honey, and leave no doubtful colonies in the apiaries, and you would have to keep close record of the queens and risk no old ones with colonies. Plenty of storing room could be added at the time of your departure, and ready-built combs would be best with perhaps a little comb foundation to draw out in some of the frames scattered among the ready-built combs. It would be all right to run one and extract the season's crop of honey, and market same on your return the first of October each season. Then during winter you could get the necessary supplies ready for next season's crop, and in February and March get the bees ready for the flow which comes on in most locations the first of April, and in some locations the main honey-flow comes on about the first of March. So you would have time to leave the bees in the best shape for the season, and right in the main honey-flow.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Erratic Weather Conditions

October weather in September, September weather in October, continued by a reversal of like nature for November and December, seems to be the closing scenes for 1911—a year that has been erratic in so far as weather conditions are concerned ever since last March.

We had an early "freeze up" here in Ontario, with the result that quite a few farmers did not get in their turnip crop. About Dec. 4th, the weather turned warm, snow disappeared, and plowing has been general for 10 days since that date. How will this affect the wintering of the bees? While in case of cellar-wintering it has been necessary to open windows at night, yet no particular harm is being caused by the warm spell, as so early in the season it is not as serious a question as it is later on in February or March. As to the bees wintering outside, the change has been for the good, as in our locality they had no good cleansing flight late in November.

At present all the colonies have had a flight inside the past 10 days, so with normal conditions from now on, good wintering is reasonably assured. Last fall our bees had no flight from some time in October until the following March, and yet they wintered fairly well. Naturally with much better conditions this fall, we are hoping for the best results in wintering this season again.

Freight-Rate on Granulated Honey

Just a few days before our recent convention in Toronto, an extensive honey-dealer in British Columbia wrote me asking that I bring the matter of freight-rates on *granulated* extracted honey before the meeting, and see if they would not take steps to have the question presented to the Railway Commission of Canada. In writing me he stated that in his opinion granulated honey in barrels or crated tins was just about as safe to handle as *cord-wood*, in so far as loss to the railways is concerned, and he thought that a separate classification should be made for the granulated article.

The idea seems reasonable, and I have been wondering if any of the railways in the United States recognize a difference between liquid and granulated honey. Perhaps some of the Western shippers, or Eastern buyers of carload or smaller lots, can give me light on this question. As it is at present, the excessive freight-rates on honey to the Western Provinces of Canada work out as a real hardship to both producer and consumer, and as my friend in British Columbia says, if the freight-rate was not so high, they in the West could handle much more Eastern honey than is possible under present conditions. While the rate on carload lots is *high*, the charges on small lots are almost prohibitive when it comes to shipping as far west as British Columbia, and northern and western Alberta. The matter is certainly one well worth looking after, and even if we could get no relief, any exertion put forth is not likely to do us any harm.

The Value of Bee-Papers

In response to your invitation, Mr. Editor, this scribbler begs to say that he, for one, values the bee-papers very much indeed. If told to say just why—well, that would require some thought, and could not be answered to the best advantage in only a few words. But the fact remains that ever since I became interested in *bees* the bee-papers have had a peculiar attraction to me, and the different issues of the different papers are always expected with keen interest; and if the mail happens to come in just before dinner, like as not the paper will go to the table with me, and if not on my chair until after the meal is concluded, quite likely hasty glances through the pages will be indulged in while the meal is in progress. Of course, such a travesty on table manners would not be allowable if we had *company*, but just in our own family circle, Mrs. Byer indeed has quite a task to keep me walking circumspectly.

Seriously speaking, I do not see how any man keeping bees can do without at least one up-to-date bee-paper, and when he relishes the one, more than likely he will increase from one to two or three. Of course, there is a great lot of "chaff" in the papers, and the writer certainly furnishes his own share of this material, yet when all is said and done, no question but that the papers devoted to bee-keeping are doing a good work in helping the business along.

And then, we must not forget the social side of the question. One of the things that makes life worth living, is the large number of real friends that have been formed through the agency of these same papers, and while this is a personal experience, no question but that hundreds of others would give the same testimony.

Bee-Keeping and Fishing

Judging by the responses received about the item of mine in a recent issue in regard to my failing in being afflicted with the "fishing habit," I judge that other bee-keepers are inoculated with the same germ also. Our friend in Iowa writes me that for the past year all his "fishing" has been done with the "silver" hook, as with them all the streams are dry from the effects of the great drouth. As he adds that the drouth is still unbroken, I surmise that prospects will not be good for the bees next year, and in that respect I can sympathize with him. While in our country the rains have fallen abundantly, yet we will have little clover for next year. Oh, well, our *streams* are not dried up anyway, so if we have no honey to bother with, we will have all the more time to "go fishing!"

Mustard Honey—Alfalfa Honey

Arthur C. Miller says, on page 367, that mustard honey is "bitterer than quinine; it ruins any honey it is mixed with." If by "mustard" he means charlock or wild mustard as we have it here in Ontario—a weed that grows very plentifully in grain on some farms—some bee-keepers, including myself, who live in localities where this plant is plentiful, will wonder if the picture is not overdrawn.

Of course, "locality" may make a difference, and mustard honey in Rhode Island may be different from mustard honey here in Ontario. Be that as it may, while the honey from that source is rather sharp to the taste, and if eaten plentifully will leave a slight burning in the throat, yet when it goes with our clover honey, as it usually does, it certainly does not spoil the honey for table use.

Concerning the "blending" of honey that Mr. Miller is so enthusiastic about, while it may be all right for his locality and others, just around Toronto a fellow would have to be pretty careful what he was doing. Certainly in that market "color" counts, and when a honey is of good color and good body, it is pretty sure to be a real good article. Of course, our white honey is practically all white and alsike clover, and basswood.

As to alfalfa, I have tasted the Western product only once, but if memory serves me rightly, I believe I liked it real well. Here in Ontario, when alfalfa yields—whether because of slight mixtures with other honey or other causes—the honey is *off* in color, and the flavor not nearly up to our clover honey. "It lacks character; it is insipid; and consumers are quick to drop it." My, that is a hard crack at the main variety of Western honey, especially on this side of the Rockies. What do our Colorado friends think of it, anyway? Get after the author of the quotation, would be the advice of this chap, who is far enough away from the would-be combatants to feel pretty safe. Anyway, I have a feeling that said author is quite able to look after himself, so I am not adverse to stirring up a little trouble when chances look so good!

Going South for Winter, Like the Birds

I have read and *re-read* what Mr. Wilder says in the December issue in connection with his plans for "wintering" in the future, down at Bradentown, Fla. If I understand his invitation correctly, the terms for other bee-keepers to "bunk" in the same house with him are, briefly: Rooms free; board furnishing at "tenant's" own expense, furnishing of room to be left for another chap in case the first occupant can not "come back." I have always heard that it was "cheaper to move than to pay rent," but this is one better, as you are not forced to move, and pay no rent.

It looks good to this bee-keeper, and if only I was sure of a bumper crop in 1912, surely I would write at once for apartments to be reserved. I have had a longing for some time to migrate, like the birds, each fall to a warmer clime, and just as soon as financial circumstances warrant, certainly that wish would be gratified.

I believe I have already mentioned the fact that prospects are poor for honey next year in our section, so like as not Mr. Wilder's kind offer will not be of any use to this Canuck for a while yet.

Bee Short-Course at Guelph

DEAR MR. EDITOR:—Do you know that the annual honey crop in Ontario is worth one and a half million dollars, and that ten thousand persons from Point Pelee to the Cobalt regions, and further north, are engaged in the business of producing it, keeping three hundred thousand colonies of bees for the purpose? Even then I venture to say not one quarter of the nectar secreted by Ontario flowers is ever utilized. And although honey-prices are advancing every year, not one-tenth of the honey is consumed in Ontario homes that our people are capable of eating.

Now how can this industry be developed? Mainly by the educational methods now being used by the Department of Agriculture. The successful organization work culminated last month in the biggest annual convention of bee-keepers Toronto ever saw. The next event is a "Bee Short Course" at the Ontario Agricultural College, Jan. 9 to 20, 1912. This course is free to all who are interested in bees, and every session from beginning to end will be full of information on the care of bees and how to make money from them.

During this course Mr. Morley Pettit, Provincial Apiarist, will give a series of demonstrations and illustrated lectures covering all the main features of practical management in a way that will be helpful to experienced bee-keepers and beginners as well. Lectures will also be given on allied subjects by other members of the teaching staff, and a few expert bee-specialists will be brought in from the outside to tell how they have made a success in their special lines, such as the breeding of queen-bees, the production of beeswax, etc.

Special time will be devoted each day to the discussion of practical topics by members of the class, and one whole day will be set aside for a conference on foul brood.

Remember the dates—Jan. 9 to 20, 1912. No fees; no examination; reduced rates on railways.

For program and further information address, G. C. CREELMAN, B. S. A., LL. D.,
Guelph, Ont. *Pres. O. A. College.*

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Newsy Bee-Keeping Letters and Apiarian Pictures Wanted

To begin the year 1912, the editor of "Southern Beedom" wishes to receive from his many bee-keeping friends of the South, newsy letters about themselves and their successes and failures, together with photographs of their apiaries, and any other important things of bee-keeping, with a description of each picture. These will be welcomed very much at this time, especially, and throughout the year from those who have none to send now. Kindly write a few lines as soon as you find time to do so, and tell some of the good things that have happened in your experiences with the bees, and what you have learned about them and their management. It will be just as interesting to hear why and where failures were made, as well as the successes.

It should be remembered that there are to be no conditions as to how you shall write this matter, whether with pen and ink or pencil, or on what kind of paper, nor how long the letters shall be, or how many words shall be used. Just bear this in mind, and in addition, that the editor wears glasses, "by the aid of which he is able to discern all kinds of writing, good or bad, in the English, German or Spanish language."

We hope that all of our good friends who have written us from time to time heretofore will continue to do so, and that we may add many more to the list hereafter. With this wish we hope that each and every one of us will have a bounteous harvest this year, and enjoy the best of health also, for without the latter the harvest is not much enjoyment.

The Texas Department of Agriculture and Bee-Keeping

Bee-keeping has reached such a stage of development in Texas, and information on apicultural and kindred subjects has grown to such an extent, that the Texas Department of Agriculture, located in the Capitol Building at Austin, Tex., has added to its various branches one on bee-keeping, and its aims are to furnish all enquirers with reliable and authentic information pertaining to this important industry of Texas. This was necessitated by the innumerable inquiries for just such information as has come to the office of the Agricultural Commissioner from time to time; and to facilitate the work of this important branch, the writer was appointed, several months ago, as "Consulting Apicultural Expert" of the Department of Agriculture. All letters for information on bee-keeping questions will receive proper attention by the writer; therefore, to make this branch of the Department an important one, all bee-keepers and others interested are asked to make use of the opportunity of asking questions at any time.

It is the desire of the Commissioner, Hon. Ed R. Kone, of the Texas Department of Agriculture, to do all in his power in aiding the bee-keepers and others of the State in their vocation, and the services of the Department are at your service at all times. In fact, the Department of Agriculture is yours, and for you to make use of whenever possible.

Gathering Texas Bee-Keeping Statistics

Texas produces great crops of honey annually, but how much is not known, and can not even be safely guessed at. The investments in the bee-business are large, but there are no figures to show the extent of these investments. There are no statistics to show how enormous the bee-keeping industry of the great Lone Star State is today, and if such figures are available we are satisfied that they would be larger than is generally supposed. This industry is an important one, and its development during the last 10 years has been greater than at any previous time. Therefore, the figures of the old census may safely be multiplied several times for an estimate of the present output of honey and investment in the bee-business. Just how much to multiply them nobody can tell.

The necessity of reliable statistics of this kind needs no argument. The compilation of such reliable information from each State in the Union would be a great piece of work at times when it is desirable to show the real extent and worth of the bee-keeping industy, either of any State or the whole country.

I am just in receipt of a letter that has been sent to all bee-keepers of the State, as far as it was possible to get the names of these, showing that an effort will be made by the State Entomologist, of the Agricultural and Mechanical College, College Station, Tex., to gather reliable statistics from every bee-keeper in Texas, for tabulation. A list of questions accompanies the letter with blanks to be filled out, and since a stamped addressed envelope in which to send the answer back is sent along, there is no reason why every bee-keeper who gets these should not take the time to give the information desired, and which would be of inestimable value to all of us when they are finally compiled.

In case there are any of our readers who do not get one of these letters, I ask that you drop a postal card addressed to the "State Entomologist, College Station, Tex.," telling him you are a bee-keeper, and would like to help by giving information about the extent of the bee-business in your section. In return your name will be put on the mailing list for valuable publications published by the Texas Experiment Station from time to time. Do not delay this.

Do Bees Move Larvae?

From a letter received from one of our German correspondents, Mr. Theo. Koerner, of Fayetteville, Tex., I translate the following:

> Referring to your article relative to bees moving eggs or larvæ, I can not share a conclusion with you unless you may be able to explain the following case to me:
>
> Two years ago I had a strong nucleus, and for a division-board a comb built half way down was used. As the virgin was lost in mating, another comb of brood was given them from an Italian colony. On the fourth day I examined the nucleus for queen-cells, but found none. Searched the hive for a possible presence of a queen, but there was none.
>
> Now I wanted to unite the nucleus with another colony, but what did I find on the half-built comb? A fine queen-cell with larva. This cell was hatched, and soon thereafter the nucleus had a medium-large laying Italian queen.
>
> But I had to have the experience of finding that this nucleus reared only a "necessity product," which quietly superseded again in the fall. THEO. KOERNER.

This is quite an interesting experience, and enough to make a person think. How did that egg or larva get to that place on the half-drawn-out comb used for a division-board, so to speak? The queen out of this cell was an Italian, hence the egg or larva from which she was reared must have been the same as the brood contained in the comb given from the Italian colony.

But most interesting is that which our correspondent terms a "necessity product"—a production when the nucleus was in dire need of a new queen. That a queen reared under abnormal conditions, or one that is not perfectly developed, is generally superseded sooner than a good, thrifty queen, is not new. Usually such queens are permitted to remain throughout the season as long as honey comes in readily, but as soon as this ceases they are invariably superseded.

But we still do not know whether bees are able to move eggs or larvæ, do we?

The 10-Frame Hive

Much discussion relative to the advantages of the 10-frame hive has circulated in the bee-papers from time to time, and the result seems to be that this size of hive is pronounced as superior over the 8-frame hive. I am glad to note this verdict, since it is in accord with what the Southern bee-keepers found many years ago. The 8-frame hive is entirely too small for best results in the South, and this has been generally known throughout the country for many years. There are, however, a few bee-keepers who have begun with 8-frame hives, and who continue to use them with very good success, but I am sure that they might do even better with the 10-frame hive, not only here in the South, but in the North as well.

To us who have become used to the 10-frame width, it is the ideal width for all purposes, especially for supering above. It gives the bees a wider surface instead of towering high up and away from the brood-nest—an item that is of great importance. If this width should for some cause or other not be suited to the size of a colony, it is an easy matter to contract to 8 or even a less number of frames with a 10-frame hive, whereas an 8-frame hive can not be enlarged to the 10-frame width. Strong colonies will need, or at least make good use of, a 10-frame brood-chamber if given them, and in my experience this is too small for all conditions, and it becomes necessary to use a shallow super over this to allow proper room. To give the same amount of room with 8-frame hives would necessitate at least two full-depth bodies, one on top of the other, throwing the top of the colony far away from the main part of the brood-nest below. Another story added would throw it still higher into the air. It is well known that the bees do their best work nearest the brood-nest, and the closer to it we can keep the work the better the results. This can be accomplished with the 10-frame hives on account of their extra width.

Another important item is that the colony has two extra combs in whfch to store honey and pollen in reserve for use at any time, hence the danger of too little honey in the hive, and possible starvation, is reduced.

Intensive-Extensive Bee-Keeping at Long Range

There is a great deal of pleasure and satisfaction in a venture that turns out successfully, and if it is remunerative or profitable in addition, this satisfaction increases—one becomes more or less enthusiastic about the matter. Such successfulness, then, has much to do with making life worth living, and a successful bee-keeper knows how to enjoy it.

That is one reason why we are, almost at the end of the year, as jubilant over our more or less successful ventures. In spite of a very dry year, and more or less unfavorable beginning in the spring, a good crop of honey was obtained and disposed of, and that at a good price, with a demand for as much more than was produced, or the entire crop itself. In other words, the orders that came in, and are still coming, after we had shipped all the honey we could get together, amounted to over 65,000 pounds, the amount shipped by us this year.

On account of the short-crop year our entire output was not even that of last year, although we have almost twice as many bees. Last year our total shipments amounted to over 81,000 pounds. The price this year was one-half cent more per pound than last year, when the average price for the entire year, and for all of the crop, was slightly more than 11 cents per pound.

Almost the entire output was bulk-comb honey, or practically all of it, as we shipped less than 1000 pounds of extracted honey during the entire year, and this was in only a few case lots with large orders for bulk-comb honey. There were very few, or hardly any, orders for extracted honey this year. Not because there was no demand for it, so much, perhaps, as the fact that we have the reputation of being almost exclusively bulk-comb-honey producers.

So much about our crop, and the kind of honey produced. Our apiary work is becoming more systematized each year, and short cuts are being adopted, and new methods worked out whenever this is possible. This enables us to produce the large crops mentioned much more economically and profitably than heretofore. Our long experience of 20 years is one important item that is most valuable and helpful toward accomplishing these possibilities, of which we used to dream when we first began bee-keeping, and thought of the probability of numbering our colonies by the hundreds.

There is a difference between *extensive* bee-keeping and *intensive* bee-keeping. There is just as much difference between these and *intensive-extensive bee-keeping*. The latter is what we have tried to carry out in actual practice for a number of years, and our attempt has not been in vain. It pays to squeeze just a little bit more out of each colony—that is *intensive* bee-keeping Others believe it pays better to pay less attention to these little details, and depend upon the larger number of colonies to make the certain amount of profit—*extensive* bee-keeping. We have found, however, that the *most* profitable bee-keeping is to pay the closest attention to both of these items at one and the same time, and thus gain the profits of intensiveness, hence our intensive-extensive bee-keeping.

It means a whole lot more work and fussing, some will say, and we grant that. For this extra trouble, however, we are so well rewarded, so that it pays, and pays big. Even if an extra man or two must be employed to assist in carrying out the ends in view, the greater returns will not only pay for this, but there will be, if the right management is followed, a nice profit besides.

The secret of success in this kind of bee-keeping is entirely the ability of the bee-keeper to carry out in every detail each and every problem that must be attended to at the right and proper time. It takes a man of good judgment, foresight, and sound executive ability to do it, but a man with a will and determination can adapt himself to the circumstances after a few years' experience in bee-keeping. It may be well to bear in mind, however, that not every person is "cut out" for such a place. In many persons either one or the other necessary essential requirements is lacking, and these can not, in many cases, be attained, no matter how anxious and determined a person might be to learn them. We can compare this matter exactly with other lines of work where the masters of industry have attained great ends in their undertakings, while others, with apparently the same chances, but a lack of certain essentials, went to the wall.

But we wish to put in a word of warning, or explanation, before we say anything more, and that is, that we are not writing these things as boasting ourselves over what we have done. Not at all, for the thought never occurred to us until we felt, as we were penning these lines, that some of the readers, especially those who do not know us so well, might think that was our aim. Our reason for giving these experiences are to encourage others to adopt the intensive-extensive ways of bee-keeping, and nothing more, and as we have gained much by the experiences of others, we are as willing to give ours in return.

However, to make this long story short, our aims are to improve our bee-keeping, and keep not only right up-to-date, but *just a little ahead of that*, if it is possible to do so, and if we find that we can profit therefrom.

As we saw Rogers, the aviator, fly over our apiaries today, on his "from coast to coast trip," we felt as though it would not be long ere we would be flying to our apiaries in a flying machine, and it is rather doubtful whether or not some of us may not remain just up-to-date enough to do just such "stunts" some time in the near (?) future. Then that will be part of our *intensive-extensive bee-keeping*.

CONTRIBUTED ARTICLES ~

The Basswoods as Honey-Trees

BY G. M. DOOLITTLE.

A correspondent wishes me to tell the readers of the American Bee Journal all about the basswoods; how early in the season it can be told whether they will bloom or not; if there are years in which they yield no nectar; and if it will pay to move an apiary to a basswood locality a score of miles away.

Regarding how early in the season we can tell whether there will be a basswood bloom, I will say that, in common with nearly if not quite all trees, the fruit-buds are formed for the next year's production nearly one year in advance of the time of blossoming. This is certainly true of the basswoods, as these buds are mostly formed during June and the first half of July, so that the results of next season's nectar-yield, so far as buds and flowers are concerned, are already formed in embryo, while the readers are perusing this article, on the apparently bare and lifeless branches of the basswood trees as we behold them these zero days of winter. They wait only for the warmth of spring to bring this dormant life into growth. It is possible that with a microscope these buds might be made to tell their secret holdings, even in mid-winter, but as there is no need of such haste, I have never tried to see as to this.

As soon as these buds unfold, some time during the coming May, then we can know to a certainty in this matter, and this will be in good time for knowing whether to make preparations for moving the bees or not.

As soon as the leaves start out a little we can find the bunch of buds at the base of each leaf, if we examine closely, as yet curled up quite compactly, and looking somewhat like the half of a white sweet-pea seed, or perhaps a very tiny, fuzzy caterpillar would describe it better. With each week this bunch of buds grows so that in two weeks this little, fuzzy caterpillar has unfolded and lengthened out till the "fly-leaf" (that carries the bunch of mature basswood seeds over hill and dale for rods around, with every passing breeze or wind in the fall, thus propagating itself in every nook and cranny within this circuit, unless disturbed by the oncoming of the woodman's ax) is very easily seen, and the tiny buds begin to separate themselves so that they can be counted.

At the end of about 7 weeks from the time the trees begin to show their green in the spring, they open their flowers filled with nectar to invite the bees to a sumptuous feast. Of course, a cool season will retard the time of bloom a week to 10 days, and a very hot season will advance it very nearly as much, but the above is the rule. By going over my old record-book, kept for more than 40 years, I find that June 28th is the earliest I ever knew basswood bloom to open in this locality, and July 16th the latest. Thus the inquisitive and knowledge-seeking eye can tell nearly 2 months in advance as to the promise for a yield of basswood honey.

Regarding a failure of nectar from this source, I will say that up to about 10 years ago, I never knew such a thing as an entire failure, although there were years during which the weather was not propitious for a continuous secretion of nectar during the whole time of the bloom. At that time we had so cold a spell after basswood commenced to leaf out, and was so forward that the little fuzzy ball of buds could be seen that ice formed fully half an inch thick during the night, and that year there was not any basswood bloom at all on account of freezing. Since then a freeze killed all the buds on the low ground, but on the hills there was some bloom, but not enough to give anything like a full yield. Aside from these 2 instances, the shortest flow I ever knew gave a 3 days' yield, in which honey was so plentiful that the bees could not prepare room fast enough to store it, with a gradual winding up of 2 days more, 5 days in all. The longest yield was of 25 days' duration, with 3 of them so cold that the bees could work only a little during the middle of the day.

The condition of the atmosphere has much to do with the secretion of nectar in the basswood flowers. The most unfavorable weather is a cold, rainy, cloudy spell, with the air or wind in a northerly direction. If basswood came in bloom at a time of year when we were likely to have much of such weather, there might be some doubt about the advisability of moving an apiary to a region where basswood is abundant; but, as a rule, we have very little of such weather during the month of July, which is the time of its blooming in most localities. During July we are more likely to have showery weather, with the air southerly, or a still time, and the atmosphere charged with electricity, at which time the nectar will almost drop from the blossoms, providing no rain comes within 2 or 3 miles from the apiary. At such times as this I have seen nectar sparkling in the bloom after it had fallen to the ground; so much so as to attract my attention in the morning sunshine. During such times as these, this nectar is almost or quite honey, not only sweetened water, as is often the case with nectar from clover, teasel or buckwheat, which makes the basswood doubly valuable over most other honey-secreting plants or trees.

Several times when basswood was yielding under such conditions, I have seen fully a bee-load of honey in a single flower, and from one stem of blossoms of from 9 to 12 flowers, I have jarred 2 or 3 thick drops of nectar into the palm of my hand, enough so it could be poured from the hand. Such extremes are the exceptions, however, and not the rule. Still, I know of nothing that will give as much honey per day under the same conditions as will basswood. One year I extracted the honey from the upper stories of a single colony during basswood bloom, and 3 days later I extracted from these same upper stories, 2 in number. Result: 66 pounds, or 22 pounds per day, as the average for the 3 days from a single colony.

Regarding moving an apiary a score of miles to a basswood locality, I will say that I believe basswood to be the greatest honey-producer in the world, and the least likely to fail to yield nectar of any plant or tree, therefore I see nothing against such moving, except the expense. Dr. Gallup, now deceased, while living in Iowa, proved years ago that basswood is an enormous yielder of nectar, when he obtained a yield of 20 pounds per day on an average from a single colony, during a period of 30 days; or 600 pounds from a single colony during the 30 days basswood was in bloom, this record being found in the American Bee Journal during the early '70's, if my memory serves me right. This record has never been beaten, if I am correct, by a single colony, during the same number of days from any other source.

If our correspondent, or any reader of this, can move their bees to a basswood locality, and return them at an expense of from $1.00 to $1.50 per colony, a surplus yield of from 12 to 15 pounds each would cover this, and all above this number of pounds would be a net gain, even though there should be no increase of stores for the winter, which would almost surely result.

By going over my old records I find that the average yield of section honey per colony during the basswood bloom was 55 pounds, covering a period of over 30 years. This is the average yield per colony of the whole apiary, not the yield of an individual colony. Now, to be on the safe side, suppose we call 50 pounds to be the average yield, or what we could expect one year with another from basswood; and to make it still more safe, suppose we call this extracted honey instead of section honey, and that the cost of moving would be 20 pounds of that yield—then we would have 30 pounds of that yield for profit. This at 8 cents would give $2.40 profit for each colony moved, or $240 for an apiary of 100 colonies, which would be an item worth considering.

Borodino, N. Y.

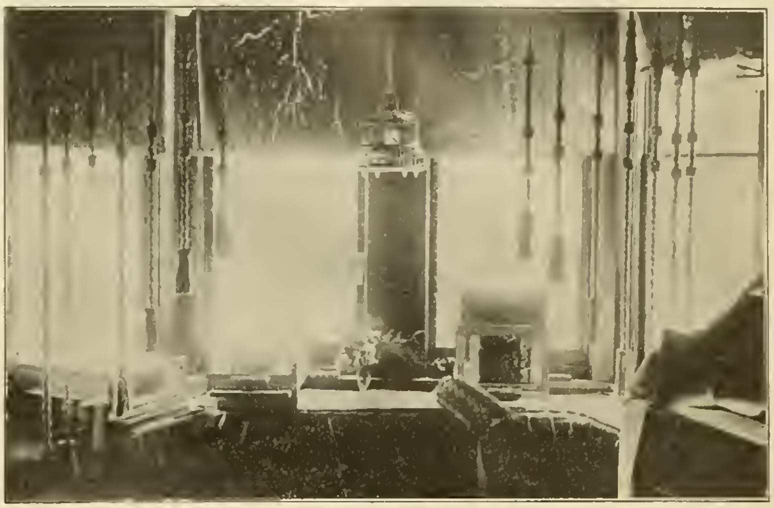
Cement Hive Bottom and Cover—Observation Hives

BY W. A. MORTON.

I am sending a photograph of two hives with cement top and bottom. This top and bottom is made of 3 parts coarse sand, and one part Portland cement. For an 8-frame hive I make them 15x24 inches, and one inch thick, and find them the cheapest, cleanest, handiest and best I have ever seen. I use 3 for each hive—one for a top, one for the bottom, and then lay one in front of the hive to keep down grass and weeds, and they are all exactly alike. Pick up one, and it is either a top or a bottom. They will not crack, nor warp, nor leak, nor blow off, rot or wear out, and will not harbor bugs, moths nor ants. They need nothing under them.

Cement Hive Bottoms and Covers.

The material for one hive costs about 8 cents, and I can make one in less time than I can nail up and paint a wooden one.


Three Observation Hivves of Bees at a Living-Room Window.

I use ½-inch blocks under each corner of the hive for an entrance, or can nail strips on the bottom of the hive. I have used these covers and bottoms summers and winters, and find them satisfactory. I like my bees as close to the ground as possible, as we have many very windy days, and when the hives are up off the ground the bees can scarcely alight. I find them coolest in summer and much warmer in winter.

Observation Hives in the Window.

I also send a picture of a window and 3 glass hives with bees in them. One is a regular 8-frame hive-body. The others are made of two 5-inch supers. I made a 1-inch wooden skeleton rabbetted on the inside to hold the glass, and with a glass top I have a very convenient observation hive.

Under each one I place a feeder so as to feed whenever I wish.

In watching the bees I see many wonderful and interesting things that happen in the bee-hive.

April 5, 1910, I took about a quart of bees and their queen out of an old nail keg, put them into the standard glass hive, and fed them sugar syrup. They surely did well. Although the season of 1910 was a very poor honey season, they filled the hive and gave 3 supers of surplus honey, and were in fine condition. The other 2 colonies were not put in until later, and each gave one super of surplus honey.

These hives were in a south window, and were left uncovered all of the time, and the bees seemed to enjoy living in the light. They were not disturbed or annoyed when we set anything on the hives. They keep the inside of the glass clean. It is an old saying that "the watched pot never boils," but the bees seemed to "boil" the harder for the watching.

These hives cost $1.50 each, and if all of the beginners in bee-keeping would have one in the window of their living room, where they could sit down by it and watch the bees whenever they wanted to, they would find it very interesting to themselves and all of the members of the family; and would learn a great many things about the bees and the hive that is a mystery to them now. They will see bees building comb, the queen laying eggs, see the eggs hatch into little larvæ, see the nurse-bees feed the larvæ and seal them over, and then see the larvæ come out of the cells as perfect bees. They would see the field-bees come in with their baskets filled with pollen, and see them shake it off over the brood, and the other bees gather it up and put it away. Then other bees come in loaded with honey, which they deposit in the cells, or other bees take from them and put it away. When it gets warm other bees form a line and force air through the hive to ventilate it, and also ripen the honey. If a bug or anything gets into the hive that they want removed, one bee will try it, and if she can not move it, one or a dozen more will come and help, and it has to go.

Many persons watching the bees come and go from a hive think all of them are gathering honey, but if they had a glass hive they would see that it takes more bees to do the work in the hive than it takes to gather the honey.

Quenemo, Kan.

Destroying Moth in Combs

BY C. P. DADANT.

In the August number of the "Abeille De L'Aisne"—the organ of one of the most progressive bee-associations in France—I noticed the following:

"An infallible and infinitely simple recipe for destroying mites and moths, was recently experimented upon with complete success, by a Rouen savant, Mr. Buguet, upon velvets, silks, woolen rugs and high-priced furs. It consists of the following:

"Procure from your druggist carbon tetrachloride, of which you pour a small quantity in a bowl or upon a dish. Place this on the floor of the closet, which you must close hermetically. That is all. The vapors liberated by this drug soon destroy mercilessly all the insects of any description which may be found within the receptacle. No inconvenience is to be feared, as the carbon tetrachloride is uninflammable, and it evidently does not have any noxious influence upon colors or the consistency of the most delicate textures. The important requirement is not to allow it to escape through any fissures or to remain breathing over it, as it acts in the manner of chloroform. The carbon tetrachloride is superior to the carbon bisulphide because it avoids danger of fire." DENIS.

I had given but little thought to this article until I found a new mention of it from the pen of my excellent and esteemed friend, Dr. Crepieux-Jamin, of Rouen, whom I have already had occasion to mention as the well-known editor of Mr. Bertrand's Swiss International "Revue D'Apiculture." He writes in the October number of "L'Apiculture Nouvelle:"

"Mr. Denis gave notice lately, in the valiant "Abeille de l'Aisne," of the experiments of a Rouen savant, Mr. Buguet, upon carbon tetrachloride. Mr. Buguet lives in the same apartment house as I do; I have known him for 20 years. I went to him for information. Here is a resume of what I learned from him:

"'When he was professor of Natural History at Moulins, in 1882, he used carbon bisulphide to preserve his collections. But later he sought for a less dangerous agent. We all know that carbon bisulphide is very inflammable, that it has a very disagreeable odor, that its vapor, which so readily destroys moths, is very toxic to human beings, and that it would be difficult to breathe it without causing unconsciousness. Nevertheless, carbon bisulphide is precious in the preservation of our wax-combs. When used with precaution, which is easy, since the amount needed is small, there is nothing to fear. But seeking for something still better is not prohibited. Carbon tetrachloride, having been placed upon the market, drew the attention of Mr. Buguet. It was offered as a solvent in the place of benzin. Mr. Buguet does not know why it has not been adopted more commonly, for it is a first-class cleansing ingredient. Mr. Buguet uses it, in lieu of carbon bisulphide, for the preservation of his personal silks and furs, and obtains just as satisfactory results. In a zinc box, hermetically closed, he keeps at the bottom an uncorked vial filled with the tetrachloride, and the liquid evaporates slowly. The vapors remain enclosed within the box and indefnitely preserve the tissues. We bee-keepers are usually at fault in the closing of our boxes and closets. We should paste paper around over the joints. In this way we would economize our drug, since a single evaporation would be sufficient, and we would be at peace for the entire idle season.

"'Carbon tetrachloride has a much less disagreeable odor than the bisulphide; it evaporates more slowly, boiling at 77 Centigrade (170 F.), while the sulphide boils at 42 (98 F.). However, if we use a wide-mouth bottle, the evaporation is speedy enough. What matters it whether it takes place within 2 minutes or 2 hours? That is exactly the difference between the two products. For us, the result is the same. The odor is similar to that of chloroform. In small doses it slightly resembles that of camphor. Although it is not unpleasant, one must beware of it—its vapors are almost as toxic; but the tetrachloride is not inflammable, which is an inestimable advantage. Mr. Buguet demonstrated this to me, by dipping a piece of paper in the liquid and exposing it to a flame. The paper did not burn until the liquid was dried out of it by the heat. This consideration is valuable enough to induce apiarists to change from the bisulphide to the tetrachloride.'"

Mr. Crepieux-Jamin closes his argument with a mention of the comparative cost of the two compounds. Desiring to inform myself as thoroughly as possible upon the cost of this drug in this country, I wrote to a wholesale drug firm for information, and also investigated the status of the compound in the United States Dispensatory. The latter work informs us that carbon tetrachloride solidifies at 30 degrees C. (86 degrees Fahr.). It has found an extensive use in organic laboratories as a solvent for fats, replacing petroleum benzin to advantage because of its non-inflammability. Mixtures of 60 percent with 4 percent petroleum benzin are also inflammable. Small doses of carbon tetrachloride inhaled cause in animals entire loss of power and consciousness, from which they soon recover entirely, but large doses occasion death.

The drug company replied to me as follows:

You have the two chemicals in question lined up about right. The bisulphide is used principally for destroying weevil in wheat, and the tetrachloride for cleaning purposes The bisulphide seems to have more odor, is more volatile, but it is explosive, while the tetrachloride is not. We can furnish both as follows;

	1 lb.	5 lbs.	10 lbs.
Bisulphide................	22c	18c	15c
Tetrachloride............	28	25	23

These prices are not forbidding, although higher than ordinary brimstone. The amount needed is small, if the combs are kept in a well-closed receptacle. The absolute safety of tetrachloride makes its use desirable for the purposes mentioned.

Hamilton, Ill.

(Karo) Glucose vs. Honey—Fraud in Advertising

BY DR. A. F. BONNEY.

No, there was no "gasping with astonishment" on the appearance of Marion Harland's article advertising Karo Corn Syrup, except on the part of the few bee-men observing enough to see it. They (the bee-men) might have thought a little helpless profanity, but they are so used to seeing patent medicine advertisements, gold-brick schemes, bluffs, rot-gut whiskey, and other alluring literature, that they would scarcely see the article complained of in the editorial in the November American Bee Journal.

Personally, I believe Marion Harland pulled down a nice little wad of "long green" for this piece of literature, otherwise she is as ignorant as an Indian. That is all I have to say; there is no other explanation for the rankest piece of writing that ever appeared. More, she probably merely sold her signature, the glucose people having done the "writing."

I think we should felicitate ourselves that the Karo people take the trouble thus to advertise honey, for that is what they are doing every time they use the word, for no one will believe what they claim, that the glucose compound is good as honey.

I took the trouble this evening to go over to the store and look up the monster (Karo), and this is what I found: Short-quart, full half-gallon and gallon cans of a compound of 85 percent glucose and 15 percent "Refiners' Syrup," supposedly cane syrup. This is actually needed to give the mess the "cane flavor" they brag about. The local merchant tells me they sell more gallon cans than smaller, but suppose the average is half-gallon packages weighing about 5 pounds, this would mean that the Karo people sell 350,000,000 poundt of the compound annually, 85 percen of which is straight glucose. *Why do they sell this amount?* Advertising? Not on your life! That is, of course, a factor, *but it is the price. Forty-five cents a gallon, can and all!*

Forty-five cents for 12 pounds of pure honey! This is the key to the mystery—*price.* Let every bee-man in the United States put up his honey in gallon pails and sell it, pail and all, for *45 cents*, and Karo will cease to be a bugaboo. What?

Take it from me, Mr. Editor, that we bee-men never can and never will be able to do *National* advertising while the output of honey is so uncertain. Look at what we ran against in 1911—almost a total failure. How about Karo? The manufacturers merely put up a little more room, bought a few more carboys of $H_2 SO_4$ and proceeded to supply the demand for a sweet that we could not. You ask the question:

"If it pays to spend huge sums to advertise glucose, would it not equally pay to spend the same amount for something so superior that it needs no misrepresentation?"

Let us analyze. While I was in the store this evening pawing over the syrup cans, I found that every wholesale grocery house adjacent to this town is putting out close imitations of Karo. One calls it "KaMo," and has but *10 percent* of cane syrup, so the probabilities are that the 300,000,000 pounds of glucose sold in the Karo syrup is only a fraction of the glucose sold combined with syrup, in the United States. Probably 600,000,000 pounds of the stuff would be a closer figure.

We bee-men produce something like $25,000,000 worth of honey that we know of, and I don't think I will be far off when I say that more than half of that—possibly 75 percent of it—is sold locally, *where* one-tenth of one percent of the selling price will pay the advertising bills. This season with a limited stock, I have not spent a cent save for a few post-cards which I make myself (at a cost of about one cent each, as I buy at wholesale), yet I have not 50 pounds of honey left.

The more the Karo people advertise, the more they will sell, *and they can supply the demand.* Would we bee-men dare contract for $10,000,000 worth of advertising space in November, to run the succeeding year? I do not believe we would. Do the glucose people spend as much as that? Will it surprise the bee-keepers in the country to know that the glucose interests probably spend more than *one million dollars annually advertising Karo alone?* I have been looking up some of their advertisements in magazines which I know get big prices per page, and I think my guess will not be far out of the way, *because* it costs but about *one cent* a pound to make glucose. What does it cost a pound to produce honey? Who can tell? I have in mind a man who has been producing honey for more than 15 years. One year lately he produced $400 worth—a bad year. He does nothing else. What did the honey cost him? Out of the $400 what could he afford to pay for National advertising?

"Why not have all the bee-keepers of the country get together as *one company?*" Simply, Mr. Editor, because there is not money enough in it. As I understand the honey-business, the $20,000,000 to $30,000,000 output of honey in the United States is *estimated.* There are perhaps not 200 men in the whole country who devote all their time to producing honey, and those have long ago learned how to do their own advertising and selling; we smaller fry generally sell our crop to the local stores, the farmers and townfolk, and get a very much better price per pound than the big producers.

If we could *manufacture* honey as glucose is made, it would pay to advertise, for we could be sure of a supply, but we can not, and that is the bar to advertising. Let me ask again, to answer your question, "If not, why not?" Would we bee-keepers dare contract even $50,000 worth of space in the fall or early spring, said advertising to run for a year, when we consider that we can *probably look for but about one good, big yield in four or five* years?

There is no sentiment in business. The Karo or glucose people prostituted the Pure Food Act by overcoming Dr. Wiley's objections, and glucose—a name for an impure thing—was allowed to be called "Corn Syrup."

Let me ask some questions:

Why can not we, now that Dr. Wiley has come to his own, have this matter taken up again, and the damage these falsifier-advertisers do reduced to a minimum? I do not care to pay anything for advertising. However, I will donate $5.00 toward a fund to prosecute the Karo people for using the mails to defraud, for lying about honey, for violation of the Pure Food Laws, or to hire a lawyer to have the matter of "Corn Syrup" taken up again, whatever a good lawyer advises. While I know full well that they will have dollars for a fighting fund where we will have dimes, *I believe we can beat them.*

Buck Grove, Iowa.

LATER.—A day or two after receiving the foregoing, the following came in from Dr. Bonney:

I did not think when I suggested that we force the glucose people to quit untrue advertising, that I should so soon run across something of the kind in the daily press, but see the enclosed article.

There is hardly an advertisement printed but what falsifies in greater or less degree. In bee-literature, note about "yellow-all-over-bees," "non-swarming bees, etc., though, happily, such advertisements are becoming rare.

Can not we again take up this matter of glucose with the Pure Food Commissioners? Can not we eliminate the lies about honey by the aid of the postal authorities? Can not we join with the Implement Dealers in this fight on dishonest advertising? That glucose is unhealthful as a food I think can be demonstrated. I am ready to subscribe to a fund for the purpose, and "money talks." A. F. BONNEY.

[The "daily press" item referred to by Dr. Bonney reads as follows, taken from the Omaha Bee:]

Dishonest advertising should be stopped by law, said President Paul-Herpolsheimer, of Seward, in his annual address to the Mid-West Implement Dealers' Association yesterday, and he asked the association to go on record in favor of a national law directed against the practice.

"We are in sad need of a national law," said Mr. Herpolsheimer, "which will compel houses which use the United States mails to furnish the goods as per their advertisements, and not to allow them to advertise one thing and furnish another, or to advertise in a misleading or deceptive manner.

"The national federation has taken the necessary steps to obtain such a law, and we should endorse its efforts and prevail upon all senators and legislators to assist in bringing about such a law."

[We wish that something might be done along the lines suggested by Dr. Bonney. Misrepresentation seems to have become a confirmed habit on the part of many advertisers. A National law might help much to stop it. Perhaps the National Bee-Keepers's Association could aid in this matter.—ED.]

No. 1.—Improving the Honey-Bee

BY ARTHUR C. MILLER.

The first consideratiou on the subject of improving the honey-bee is, "What is there to improve?" Are your bees Blacks, Hybrids, or Italians of sundry strains?

Our bees are, in a general way, much like a field of corn—made up of all sorts, at a casual glance fairly uniform, but on close inspection scarcely any two specimens alike. Obviously the first thing to do is to select stock from which to breed. Blacks, by most of us, will be promptly discarded, as their faults outweigh their virtues. Hybrids are too variable and too uncertain as to their offspring to be desirable if we can get anything better. Of the so-called "pure" races, it needs a stretch of the term to entitle them to be called "pure." A pure strain of animals or plants is one, which, in the majority of cases, will yield offspring like itself, and this can seldom be said to be true of any so-called pure strain of bees.

You may say, "I have a tested queen from Mr. Blank, which produces uniformly marked bees, and she must be pure." But what is her ancestry? Mr. Blank says that he regularly introduces new blood to keep his bees from deteriorating by too close beeeding, so that you may find your "tested" queen has a dozen different strains of blood in her make-up. But such a queen will probably be the best that can ordinarily be obtained because commercial queen-rearers are not skilled breeders. They are perforce producing a fair average grade of good appearance, and from the very nature of their business must rest there, and can not afford to devote the time to such tests as are needed for the higher degree of breeding. Taking all things into consideration, we will do quite as well to go among the bees we have and select, as we will to buy high-priced breeding-queens, provided, of course, that he have something better than low-grade hybrids.

How and what shall we select? On the answer to that question hinges our success. I can tell you what factors constitute a good bee, but I can not give you discernment—that is something which, if you acquire at all, mus be by your own efforts. Mr. Burbank's success with plants lies in his wonderful ability to see factors which to less gifted persons are quite non-existent, and to the enormous scale on which he works. He has no new methods, no magic, other than those two things.

To return to the bees. Color is usually the first point looked for, partly because we base our idea of purity on the markings, and partly because uniformly-marked bees appeal to us. As a means of identifying the presence of certain strains it is helpful, but do not place too much dependence upon it. What we want is *honey*, so let us find the colonies which have yielded the best. If you have not practised annual requeening you are handicapped, for a colony of a superior value may show to as good advantage as one of inferior merit merely, because the first had an old queen and the second a young one. However, we must start somewhere, so let us pick out the colony which appears to possess the most of the traits we desire to perpetuate and increase.

The next step is to requeen every colony from that queen, and no care need be exercised as to how they mate. Except to take particular pains to secure the safe wintering of the breeding queen, the first year's work closes there. In some few localities, or in some exceptional seasons, we may get two breeding seasons in one year; that is, all the drones of the first part of the year are killed, and later a new lot are reared, and if we reared our queens early, and the second breeding-spell comes a considerable time after the first one closed, our young queens may give us a fair number of drones. If such a thing happens we can gain a year.

The second season we proceed as follows: As many queens as we will need, and a few more, are reared from the original queen and allowed to mate in the home-yard, for all colonies are headed by daughters of the original queen, and all their drones possess the same combination of bloods as the queens to which we wish to mate them. The only drones we need suppress are the drones of the breeding-queen, for her drones represent only her blood, while her queen-daughters represent both her blood and that of the drone to which she was mated, and *their* drones also carry both lines.

After requeening all colonies with the young queens (except the breeding colony), the next step is to watch carefully to see what the offspring are to be. Mismated queens are soon detected, if the mating is much different from our selected stock, but some cases may for the time escape us; however, most of them will eventually be detected. From now on keen, careful watch should be kept of all colonies, and upon your ability, natural or acquired, depends your success. Your first effort must be to select a half-dozen queens from which later again to select a couple of breeders, one for use and one for reserve in case of accidents. If the old original breeder lives through to another season, good; but the chances are that she won't, for quite probably she was a year old when first selected.

So far as mere breeding goes, from

now on you each year pick out one or two breeders, holding them in abeyance as long as the older breeder lives, and letting the young queens mate in the yard. Your efforts are confined to marking the best as possible breeders, and weeding out the poor and mismated.

How far have you progressed? In one sense a great way, in another sense probably not at all. You have your apiary stocked with bees all of one strain, and this means more uniform work of the colonies, ease in determining internal conditions by external appearances, and generally in facilitating all work about the bees. But from the viewpoint of the breeder, we have merely got a fairly pure strain, and by regular weeding out of the inferior members, we keep it up to a good average. But above that it is known we can not go by that process. To advance, we must find a true sport, or, more properly called, a mutation. Scientists now believe that mutations are constantly occurring, but only rarely to so marked a degree as to be readily noticeable or of value to mankind.

A sport or mutation is a definite change which perpetuates itself in the offspring, and once found and isolated, it forms a distinct strain or variety. Mutations may be useful or not to you, but if you are to raise your bees above the average you have established, you must find a favorable sport. All marked variations are not sports; that is, will not perpetuate themselves, hence when you think you have found one do not hasten to stock your whole apiary with it, but try it out by rearing a few queens and see if their workers show the traits regardless of how the queens are mated. If the sport is true, the chances are that it will manifest itself; but to make sure, proceed with the breeding as I have described, but do the work far enough from other bees so that you can be pretty sure to get some right matings. If, then, you find you have a true and valuable sport, requeen the apiary with it, and proceed as before.

Do not worry about inbreeding—if you follow the instructions above set forth, it will never trouble you. Stick to the strain you have selected, and do not cause yourself loss and endless trouble by constantly running in new blood.

The more colonies you have to select from, the greater your chance to find a sport, and also the more keenly you must watch.

Providence, R. I.

(Concluded next month.)

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Why a Queen's Bees Vary in Color

Last summer I reared 5 golden Italian queens. After they were mated I introduced them to full colonies. The young of each of these queens vary greatly in color. About 2 percent are dark bees with no yellow bands. The rest are fine 3-banded yellow bees. There are none with one or two bands. My other bees are all 3-banded Italians. I have seen both kinds hatch on the same comb. Will you please explain why this should be? I have also had this happen with a tested queen which I bought in 1910.

PENNSYLVANIA.

ANSWER.—There is the barest possibility that among the progeny of a pure queen there might be a few dark bees as sports; but the great probability is that there was a little black blood in the drones with which the queens were mated.

Painting Bee-Hives

Please advise me relative to the painting of hives with the bees in them, and at what period of the year is it best to do the work? I should also like to know whether or not standard paints are all right to use.

NEW YORK.

ANSWER.—You can paint a hive with bees in it at any time when you can paint the outside of a house, and can use any paint proper for the same purpose, with the exception of the part at the entrance where the bees alight. If you put enough drier in the paint used there, and paint in the evening after the bees stop flying, it will be dry enough next morning so the bees will not stick in it.

Winter-Cases—Mason-Jar Feeders

1. I am planning to build winter-cases, 24x36 inches, each to hold 2 colonies. I also intend to leave the cases around the hives in the summer as a protection from heat. Will the bees become confused and enter the wrong hive, or will queens returning from their mating-trip be liable to enter the wrong hive?

2. Will the zinc top on a Mason jar taint or poison the syrup when used for feeding? I have been in the habit of breaking the porcelain out and punching holes in the covers.

3. Is not the above style of winter-case with 2-inch packing on the sides and 14 inches on top, better than a double-walled hive? I am going to make them in two parts, upper and lower.

OHIO.

ANSWERS.—1. I suppose your idea is that bees or queens may be confused by having the two entrances in what seems to them the same building. I don't think there will be any trouble in that way. I have used double hives with entrances not 6 inches apart, and I don't think there was any more trouble than with separate hives.

2. I don't know for certain about it; but I think there is danger from the zinc, especially if the feed should stand in contact with it for any considerable time.

Knowing Foul Brood—Removing Supers—Feeding Bees

1. How may I know foul brood?

2. Is it proper to take off the supers in the fall of the year?

3. How is the best way to feed bees? I have used the Miller feeder, and the pan with excelsior, as recommended by Dr. Phillips, but I have had very poor success, as the robber-bees kill out the colony and eat up the feed.

ARKANSAS.

ANSWERS.—1. If it is American foul brood there will be a disagreeable odor present, and the most distinct characteristic is that if you thrust a toothpick into the rotten larvæ and draw it out, it will stretch out in a string an inch or more before it breaks. If it is European foul brood, the unsealed larvæ, instead of being pearly white, will be quite yellowish.

2. In your latitude (36 degrees) it will probably do no harm to leave extracting-supers on the hive over winter. But it will not do to leave section-supers on the hive over winter in any climate, because the comb in the sections will be spoiled. Neither should the sections be left on until fall, unless the honey-flow continues until then. Just as soon as the bees stop storing in the sections they should be taken off.

3. The plans you have tried are both good. I have fed tons of feed with Miller feeders without any robbing. There is no chance for robbers to get at the feed without entering the hive entrance and going up to the feeder through the colony, and a strong colony would never allow that. I don't understand how you could have had robbing unless it was with a colony too weak to defend itself. With a weak colony it might be safer to put the feeder on the hive after flight has ceased in the evening, and then to take it off before flight in the morning. It might be still better to use the feeder only on strong colonies, and take from these strong colonies combs already filled to give to the weak ones.

Nucleus Hive—Thickness of Division-Boards—Brood for Making Increase

1. If using 10-frame hives would you recommend more than one frame in the middle compartment of the nucleus hive described in "Forty Years," page 244?

2. What is the thickness of division-boards? Would three-sixteenths inch be better than thicker?

2. Is open or sealed brood taken from the feeder colonies, in the plan for increase in "Forty Years," page 254?

4. Are there any changes in the plan to recommend?

NEW JERSEY.

ANSWERS.—1. I don't know for sure, but I think I would prefer 2 frames.

2. The thickness I have used, as given in "Forty Years," is five-sixteenths. Possibly three-sixteenths might be better, as it would allow the nuclei to be closer to each other for warmth,

It is only fair to say that lately I do not make so much use of these nucleus hives. It is rather more convenient to use a full-size hive for a nucleus, for so often I want to build up the nucleus into a full colony. But it takes fewer bees in a hive with more than one nucleus, as the nuclei have the benefit of each other's heat.

3. Both, as you will almost always find both sealed and unsealed brood in the same frame. But preference is given to the frames containing most sealed brood, as being best able to take care of itself.

4. I don't know that I have any changes to recommend.

Brood-Frames and Fastening Foundation in Them

I have your "Fifty Years Among the Bees," and having just read what you say about frames, on pages 83 to 86, I am moved to stop short and write you some thoughts of my own, in the hope of getting some help from you.

1. My plan is to have each piece of the entire frame in two parts, the same as you have the bottom-bar. Then nail them together with foundation between, after having the two parts nailed separately, and the nails started in the end-bars for fastening the two parts together, and driven through far enough to run the wires around the projecting points. Then lay the foundation on over the wires, frame and all, then lay the other part of the frame on and tap it with a hammer to start the points of nails from below up into the end-bars, then turn over and imbed the wires and finish nailing the two parts together.

This would save fussing with wedges, hot wax, etc., and save some time wiring frames, as it is easier to run wire around nail-points than to run it through small holes. Then the same nails you use for spacers would help hold the two parts together. What do you think of the plan?

I have never used splints, but found no fault with wires so far. Neither have I used nail-spacers, but I am using both wood and metal-spaced frames, and I like the wood decidedly the best.

2. I used long top-bars last year; this year I bought nothing but short top-bars, and end-spacing staples. Have trimmed the long top-bars to a point at the end, and find that I can handle them just as well, and they will stand a greater angle in the hive without dropping in than the ones with the shorter top-bars. I believe if they were made with the long point, at the factory, I would prefer them, as it would save driving the staple.

3. Likewise I think the bottom-board

should be long enough to reach nearly to the hive-ends, and cut to a point so as to serve as a guide to keep from killing bees with end-bars in lifting out the frames. What do you think of this?

I am well pleased with your book, and am finding much information I had not seen elsewhere. You see, by the plans outlined, that my aim is to save time, and get a frame that can be handled with less danger of killing bees. Can I do it? I have been driving staples in the bottom of end-bars, but this takes time. It seems to me that the bottom-bars could be made a little longer and cut to a point at the factory with litile if any additional cost to the user. OKLAHOMA.

ANSWERS.—1. It is difficult many times to say how a thing will work until it is actually tried. Your plan, however, looks original and ingenious, and seems no slight improvement over stringing wires through holes. It is possible, however, that upon trial you may not like very well to have all parts of the frame split. The bees sometimes seem to think that the space in the split part is not just as it should be, and gnaw it to make it larger. At least that is the case with bottom-bars. I don't know how it would be with top-bars and end-bars.

You say you have found no fault with wires so far. It is possible that there is no fault in your case, but in some cases there has been serious fault without its being noticed, at least it was not thought to be a fault of the wiring. With horizontal wiring, especially if the wire be left a little slack, as some advise, as there is a tendency for the foundation to sag, stretching the foundation at the part near the top-bar. This stretching may be so much that the cells will not be used for some distance below the top-bar.

2. You are right in saying that you can handle long top-bars cut to a point as well as short top-bars with staples. The object of the short top-bars, however, is not to make handling easier, but to make less trouble with bee-glue. But there is no need to have the short top-bars drop down. I have just been out to the hives with a rule to see how far a frame must be pushed angling before it would drop down. I pushed the frame close to one side of the hive; then, keeping the one end close to the sids of the hive I had to push the other end 4 inches before it would drop down. I think you will never care to have your frames more angling in the hive than that. My top-bars are 1⅛ inches wide; a narrower top-bar would drop more easily.

3. I never tried lengthening bottom-bars cut to a point, but I have tried staples on the lower end of the end-bars to keep the end-bars the proper distance from the end-wall of the hive. This prevents killing bees, but the advantage is more than balanced by trouble in another direction. With these staples at the lower end of the end-bars—and it would be just as bad or worse with projecting bottom-bars—the frames must be lifted with such great care until they are entirely out af the hive, that one can work more rapidly without any kind of spacing and still kill no bees. For if handled rapidly, the jarring against the end-wall will alarm and irritate the bees, a thing to be avoided, especially if queens are to be found.

Management for Increase

1. Will the following plan do to follow May 20 to June 5 for *increase?* I thought of taking the queen and a frame of brood and putting it in a new hive on the old stand about May 20 to June 5, at 11 a.m. to 2 p.m., and then remove the old hive to a new stand and introduce a laying queen sent me by mail. Do you think it advisable to do so, or would you advise a better plan?

2. I intend to fill up the balance of the hive (with queen, brood-frame and bees that will be on the frame) with full sheets of foundation in an 8 or 10 frame hive, no drawn comb being used. Would you advise using the starters instead of full sheets of foundation? NEW YORK.

ANSWERS.—1. The colony on the new stand with the new queen would be in very prosperous condition, but the one on the old stand is the one to which you will look for surplus, and that does not have the very best chance. You say you will leave on the old stand the queen and one frame of brood. If you do not take the adhering bees with that frame of brood, you will have no bees in the hive except the returning field-bees. Even if you take the adhering bees with that one brood, there will be young bees enough for house-work, and some of the field-bees will be obliged to turn to comb-building and nursing if the work is to proceed satisfactorily. Moreover, those old bees will be dying off all the time. Remember that the average life of a worker, in the busy season, is only about 6 weeks. But 16 days of the youngest of these field-bees have already been spent before they start a-field, so that only 26 days of their lives are left. These are the youngest, mind, and the others will be dying off daily, so that before any young bees shall emerge from the new combs four-fifths of the entire force will be gone. To remedy this, the thing to do is to shake the bees from at least half of the combs in the old hive into the hive on the old stand. That will leave still plenty of bees to care for the brood in the old hive.

2. If you use only starters you will be sure to have a good deal more drone-comb than you want.

Roofing Paper for Hives in Winter

Please discuss the advantages and disadvantages of roofing paper, such as "Ruberoid," as a wrapping for the winter protection of bees. OHIO.

ANSWER.—I don't know enough about "Ruberoid" to discuss it fully, yet if you mean to use it to wrap about the hives in winter, I should think it altogether too heavy, if it is the same material that is used for roofing. It has the advantage of durability, and for covering over the top is no doubt excellent. But its heaviness, and especially its stiffness, would make it unfit to wrap about a hive to be tied on. The lighter tarred building paper is better for that, and less expensive. But I am not speaking from experience, as I winter bees in the cellar where nothing of the kind is needed, and if any one can give fuller information I yield the floor.

Colors and Varieties of Bees

Which are best, Golden Italian, Carniolan, or Red Clover bees? What color are Golden Italian and Red Clover bees? I don't know which is better for brood, golden color like the Cyprians, or the golden Italian. Are the Red Clover, Golden Italian, and Italian, different kinds? JAPAN.

ANSWER.—Each kind of bees has its admirers, but probably the larger number prefer the 3-banded, leather-colored Italians.

Golden Italians are of the same color as other Italians, only a larger number of their bands are colored. It can hardly be said that there is any distinct class of red-clover bees. Any bees that work on red clover may be called red-clover bees. But the trait does not seem to be permanent, and no matter how well a colony may work on red clover, you are not sure what the next generation will do. So you see a Red Clover bee may be of any color that bees have.

With regard to brood, I don't know which rears the most, although the Carniolans are reputed to be good brood-rearers. But it is not always the most prolific that are most profitable.

Queen Terms Used by Queen-Breeders

In the advertisements of queen-breeders, the following terms are used which I do not clearly understand: Tested, Untested, Select Tested, Select Untested Queens, and Breeders. For the benefit of myself, and possibly other "greenhorns," I wish you would explain these technical terms, and also why "breeders" are so much higher in price than other queens. TENNESSEE.

ANSWER.—A Tested queen is one whose progeny shows she has mated with a drone of her own race. In the case of an Italian queen you will see that that will mean that the worker progeny of the young queen shows the 3 yellow bands.

An Untested queen is usually one sold as soon as she begins to lay, and so nothing is yet known as to the appearance of her progeny. An untested queen, of course, can be sold at a less price than a tested one, and that for two reasons. In the first place, it saves the expense of keeping the queen some 3 weeks, if she is sold as untested. In the second place, if queens are kept until tested, those which do not come up to the test must be rejected or sold at a lower price as mismated, while all will be sold at the same price if sold while untested.

A Select queen, either tested or untested, is one that is selected because it is unusally good in appearance. However it may be with a select tested queen, a select untested queen has nothing but its looks to entitle it to a higher price, for nothing can yet be told about the looks of its unborn progeny, to say nothing about the performance of the same.

A Breeder is one that is considerably better than the average, and so of unusual value to breed from.

You will see that there is chance for a good deal of looseness in the whole business, especially as good looks and good behavior do not always go together. "Handsome is that handsome does."

Temperature in Russia and America—Bee-Diseases

1. I would like to know what part of the United States is equal as to temperature to center of Russia. Here we have, in winter, from zero to 30 degrees below zero (Reaumur thermometer). Most of the time it is between 10 and 25 degrees below zero. From October to April the earth is covered with snow, which usually thaws in April. In summer we have hot days, as hot as 30 degrees, Reaumur, but usually it is from 15 to 25 degrees. We take the bees out of the bee-house between the 15th and 30th of April, when there is frequently yet some snow; and take them in between the 15th and 30th of October, as in October the nights are cold, sometimes as cold as 15 degrees below zero. As you see, the bees are in the bee-house 6 months, but often they have no flight yet in September, as the temperature is no higher than 2 or 3 degrees. As I subscribe for the American Bee Journal, it would be very useful for me to know what part of the United States is in the same climatic conditions for bees as we are here. But do not forget that we have the Reaumur thermometer. Perhaps you would explain the difference between it and the thermometer you use in America.

2. The last two years we have had some dead brood, which very much resembles foul brood, as it is described in the books, only when a stick is put into a dead larva it does not make a ropy string an inch long, as I have read it will do. We took all possible precaution against contagion, even to destroying the sick colonies. Of course, if we knew it was not foul brood we should not have thought of destroying. And we have no means of knowing for sure. I read in the American bee-papers that one can send a sample of sick brood somewhere and be informed if it is foul brood. Do you think if I sent a sample from Russia I would get an answer? Or do they answer only in America? RUSSIA.

ANSWERS.—1. It is very unfortunate that Russia and America do not have thermometers of the same kind. The Fahrenheit thermometer—the one in use here—takes for its zero point the temperature made by a mixture of snow and ice (I think I have read that at one time it was believed that was as cold as anything could get to be), and then divides the scale between that and the temperature of boiling water into 212 degrees. That makes the temperature at which water freezes at 32 degrees, and the temperature of boiling water 212 degrees. According to your thermometer (the Reaumur) water freezes at zero, and boils at 80 degrees. That seems more sensible, at least at the lower end. But the Centigrade is more sensible than either, for, according to that, water freezes at zero and boils at 100 degrees. While the Centigrade shows 100 degrees between the freezing and the boiling points of water, the Fahrenheit shows 180, and the Reaumur shows 80. To change Fahrenheit reading to Reaumur, subtract 32 from the Fahrenheit reading, then multiply by 4 and divide by 9. To change from R. to F., multiply by 9, divide by 4, and add 32.

You have in winter from zero to 30 degrees below zero, R. (from 32 above zero to 35½ below zero, F.). Most of the time it is between 10 and 25 degrees below zero, R. (between 9½ above zero and 24 degrees below zero, F.). In summer you have it as hot as 30 R. (99½ F.), but usually it is from 15 to 25 R. (from 67 to 88 F.) In October the nights are sometimes as cold as 15 below zero, R. (2 below zero, F.). Now that we have temperatures before us in both Russia and English, I must say that I don't know where you could find a corresponding temperature in this country. Nijni Novgorod, where you are, is in latitude 55 degrees north. That would take us away up into Canada, some 6 degrees above the principal boundary line of the United States, and like enough you would have to go somewhere up there to find something like your climate.

2. I don't know just what is and what is not allowed by our Government, but Dr. Phillips and his coadjutors are a very nice lot—we are quite proud of them—and unless there is something in the way to prevent, I feel

pretty sure they will help you out. At any rate, I should advise you to send a sample of diseased brood about 4 inches square like enough you would call it a square decimeter) to Dr. E. F. Phillips, Dept. of Agriculture, Washington, D. C., U. S. A., and you will at least have a courteous reply from him.

REPORTS AND EXPERIENCES

Pretty Good for a Poor Year

I had 5300 pounds of honey from 80 colonies, spring count, this year, of which 1100 pounds was comb honey. This does not show very well, but some bee-keepers a few miles from me had no honey at all.

I sold all my honey at home, and could have sold more. The comb honey I sold at $1.00 per case of 24 sections, weighing 21½ pounds. I put my bees into the cellar Nov. 17th, and they seem to be very comfortable.

HERMAN HEURKENS.

Green Bay, Wis., Dec. 28.

Bees in Big Horn Basin

Our bees have done as usual. I stacked the supers on top of the hives and they filled them. They averaged from 150 to over 200 pounds per colony. They are wintering in good shape so far, on the summer stands. They have not had a flight for 10 days, and this is longer than I ever saw them housed up. The winter here promises to be a steady one, and I am afraid we will not have a Big Horn Basin winter this time.

Cody, Wyo., Dec. 29. J. D. KAUFMAN.

When Buckwheat Yields Best

I noticed in the December number of the American Bee Journal something about bees working on buckwheat. I was born in New York State, and had my buckwheat and bee experience in Ulster county, where I was a boy. My father and I hunted bees in the woods, and I found out that when it was a bright, sunshiny day the bees didn't do much on buckwheat from 10 a m. to 2 or 3 p.m., but in cloudy or lowery weather they would work on it all day, though not so much from 10 a m. as they did after 2 p.m. I also discovered that they did not work on the honey late in the day, even when there was plenty of nectar in the buckwheat bloom.

Newcastle, Nebr. A. C, BUTLER.

Light Honey Crop

The honey crop in the Nueces Valley was very light this season. Good spring rains were followed by scorching winds that dried the nectar. There was no rain from the middle of May up into September. The last of October a honey-flow started. Plenty of brood was reared. Bees go into winter quarters in good shape. With a bee-keeper's hope we look forward to another season. Four years ago this section was a cow-pasture. Now there is a railroad, a town of 1000 people, with 1800 colonies of bees on 20 miles of the Nueces River. All good locations are taken up here, but many pastures are being opened up where there will be good locations along the rivers and lakes.

C. H. MILLER.

Crystal City, Tex., Nov. 28.

"Karo Syrup" and Selling One's Self

In reading over the advertisement signed by Marion Harland, stating that "Karo syrup" is as rich and sweet as honey, richer in consistency, and without the cloying qualities of honey, etc., it has brought to my mind a controversy I used to have with a butcher (about 35 years ago). He peddled meat, and stopped at my place regularly. He contended that every person "had his price," and would sell if he got his price. I contended that there were a great many people who would not sell at any price; that no amount of money would tempt them to sell out; that they held certain principles that were above price. He argued like this: The strongest man physically could be over, loaded, and his strength would break; also that the strongest intellect would give way under strain, and that the strongest moral fibre would yield under sufficient strain; or, in other words, "that a bribe large enough would buy any one." Now, the editor of the American Bee Journal has asked about a dozen questions in November, 1911, issue of the American Bee Journal in regard to that statement signed by Marion Harland, and I frankly admit that I am unable to answer them; but I wish to ask just one question in the American Bee Journal, and that is this, "Was the butcher right?"

Carpinteria, Calif. A. L. DUPRAY.

[No, *we* don't think the butcher was right. There surely are many people who can not be "bought;" but there are also many who sell themselves, and very cheap, at that.—EDITOR.]

Report for Season of 1911

I had 7 colonies, spring count, and harvested 400 pounds of good honey, and increased to 16 colonies in good shape for winter.

J. M. WISMER.

Jordan Station, Ont., Nov. 30.

Wintering in the Cellar

I put into the cellar 193 colonies of bees on Oct. 31st. They are in splendid condition. I hope to take them out on May 1st after 6 long months of confinement, in good condition.

JACQUES VERRET.

Charlesbourg, Que., Dec. 28.

Dry Year for Bees

This has been a terribly dry year here, but I got a fair surplus of comb honey—2000 pounds from 58 colonies, and increased to 90 colonies. Alsike and white clover are our main honey-flows. We are living in hopes for 1912.

EARL R. BURT.

Eagle, Mich., Dec. 27.

Honey Crop Almost a Failure

I have been keeping bees 4 years. I started with 4 colonies, and now I have 25. I have lost some and bought just about as many. The honey crop was almost a failure this season on account of drouth in the early part of the season, and too much rain later.

JAMES JOHNSON.

Pocahontas, Ark., Dec. 4.

Bees Did Well on Honey-Dew

I have 25 colonies of bees in very good shape so far, but I think that some of them will run a little short of stores before spring. We are having very nice weather at present, and generally do from this time up to Christmas. My bees did well this year, the biggest run being from honey-dew. The fall flow was very deficient.

J. K. BARRON.

Springdale, Ark., Dec. 4.

When Buckwheat Yields Nectar

Referring to page 358, I may say that I have kept bees in a locality where much buckwheat is grown, for the last 30 years. I know only from common observation. When the buckwheat is at the right stage of growth, and the conditions of the atmosphere right, it does often yield nectar all day long. If the soil is a little too dry, and the air hot and dry, nectar-secretion seems to stop about 10 o'clock in the forenoon. I am in doubt whether nectar-secretion has really stopped or whether it has dried down so the bees can not gather it. As soon as the sun lowers—about 4 p.m.—the bees are at work again bringing it in.

The same rule holds true in regard to honey-dew from the leaves of trees. It dries down on the leaves in the middle of the day so the bees can not take it until the dews of evening begin to fall. I suspect it is sometimes the same wtth buckwheat. If the air is highly charged with electricity and moisture, buckwheat and other honey-plants seem to secrete nectar more freely. Some plants secrete best when the soil is rather dry. The temperature of the air has much to do with nectar-secretion.

The exact conditions of soil, temperature, and moisture of the air and soil, I do not know.

F, WILCOX.

Mauston, Wis.

Bee-Keeping Conditions

It has been necessary to feed the bees for the past 2 months. Last Sunday we had some fine rains, and also on Monday night. Tuesday was cold, and few bees were flying, but on Wednesday the bees were bringing in honey and plenty of pollen, and some of the queens had 3 and 4 frames of brood.

As they can fly almost every day, the result is that they consume more food or honey than they do back in the Central States, and it is essential that they have more food, else they will not winter.

We are not pestered with bee-moths here, as our nights all through the year are too cold for the moths, and so the bees are not called upon to guard against them.

J. C. FROHLIGER.

Berkeley, Calif., Dec. 9.

Regular Use of Honey

My experience in practise for over 40 years has demonstrated the wonderful benefit derived from the regular use of honey as a sweetener of foods.

It is of particular life-giving value to the nerves, and a reliable assistance in the general maintenance of health.

Pure honey merits the special attention of every family for their daily use.

Honey is, the concentrated essence of highest refinement in Nature's green vegetal realm.

Pure honey is a direct brain and nerve food, and is the best heart-cordial.

It retains moisture in the blood and circulatory channels, thus preventing and removing over-heated, feverish conditions.

Honey is a reliable laxative to the intestines.

I know of a number of families who do not use any other sweetening.

"My son eat thou honey for it is good."
"Honey-comb is health to the bones."

I could write a valuable story full of very interesting, tale-telling details regarding that precious product of our most exemplary, fleet-winged servants—the intelligent, vita-mechanical busy bee.

"Honey-mead" is a wholesome beverage—one spoonful of honey in half a pint of hot or cold water, to which add a small pinch of red pepper.

I would give earnest warning against imitated and adulterated honey.

Yours for *real, unaltered, bee-made honey*,

Hightstown, N. J. DR. VICTOR B. HALL.

Comb Honey—Cellar-Wintering

Although I did not attend the Michigan convention at Saginaw with the idea of reporting it, yet there were some "glittering ideas" expressed, which, to me, seemed very important.

Mr. L. S. Griggs spoke on the production of comb honey, first making an apology for his subject by saying that, as he had purchased a comb-honey equipment, he thought he must use it in order to get the worth of his money, even though extracted does pay better. This seemed to be the signal for everybody to "hand comb honey a lemon." Pres. Townsend capped the climax by saying he had been *burning* his own comb-honey equipment this winter. However, Mr. Griggs claims to have had very fair success with comb honey, and his principal expedient, he says, is to use 9 frames in a 10-frame hive, putting thin division-boards at both sides to give the bees plenty of room to crawl up between the side of the hive and the division-board. Supers are similarly arranged. He notices that these spaces are regular highways. The result is that the bees begin at the sides of the super first. He puts his baits at the sides. He runs some of his yards for extracted honey, and uses the same expedient. It is a modification of one of Simmins' plans.

Several present thought that this and the habit of putting empty supers on top does much to check swarming. Pres. Townsend quietly remarked with a knowing smile that these side-spaces are very important, giving us the impression that he had long used the method in his own yards. As for the practise of putting empty supers on top instead of next to the brood, practically every "big" man present approved of it; and there you are, books all saying one thing, and big men here all doing the opposite thing.

Mr. C. F. Smith told an amusing story of his experience in cellar-wintering. His cellar is in a clay bank, and is damp—has had 3 feet of water in it at times, and there is no ventilation. The temperature runs up to 70 degrees F. To use his expression, the bees "rotted" in this place. One spring he noticed the cover had fallen from one of the hives, and he expected to find the colony dead. It was not. It made his best colony that year. Since that time he has always left the covers in the yard, and (with all his supposed drawbacks) has never had a colony winter poorly on account of bad cellar conditions. Two inches is allowed between the hives as they are piled up; covers and bottom boards are omitted. Burlap is used over the bees. As he keeps 115 colonies, he is apparently a man of experience. So much for Quinby's method revived.

There were many other excellent papers.

In his address, Pres. Townsend said the main hope for big crops is in alsike clover.

Mr. Guernsey's talk on foul brood was especially edifying.

Altogether, the convention was a great success, and we are hoping for another of the same kind next year.

Battle Creek, Mich. CHAS. A. JOHNSON.

Had a Fair Honey Crop

I had a fair crop of honey the last season. I commenced with bees 4 years ago, and they certainly are a great pleasure to me.

Last spring I started with 10 colonies, which had all wintered well, increased them to 15 during the summer, and produced 750 pounds of chunk comb and extracted honey. The very dry weather in early summer and the excessive rains during September cut my honey crop short by a whole lot. During the past summer I saw my bees work on red clover, the first time I have ever seen them do so. I am using the 8-frame Langstroth hive, and have all Italian bees. I love to read the "old reliable" American Bee Journal. F. A. WICKLEIN.

Percy, Ill., Oct. 26.

Packing Bees for Winter

I have a way of packing bees to winter on the summer stands which I think is worth telling about. Put 3 or more section-holders in a super and spread a burlap sack or any cloth over the bottom of the super inside and fill it with dry autumn leaves full and tight, and put the cover on. This keeps the bees warm, and allows ventilation up through the leaves, and the bees have room to pass from one comb to another over the top of the frames and under the mulch of leaves.

I probably keep more bees than any one in this (Cowley) county, but last season, as well as the one before, were very light honey-yields, owing to the extreme dry weather and shortage of flowers, but we are hoping for next season, as the ground is moist and in good condition now, and that was not the case a year ago. W. L. POWELL.

Arkansas City, Kan.

Bad Season for Bees

The past was a bad season for bees on account of the drouth. A great many bees starved during the summer on account of nothing coming in. They didn't breed up, but dwindled almost to handfuls. I still have 36 colonies with few bees in after doubling up a good many. This has been the worst season I ever saw. I have fed 400 pounds of sugar. The bees that are not fed will all be dead by spring We will have to wait till 1913 for a white honey-flow, which is our main source I have 120 hives all together, with bees all dead but 36 colonies, which will be very weak next spring. I will fill the empty hives as fast as possible.

WM. RICHARDS.

Louisburg, Kans., Dec. 14.

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

WANTED—A hustling helper in the bee and honey business. B. Walker, Cicero, Ill.

SAMPLE OF HONEY 10 years old, and Best Mailing Case—free. 12A1y
C. W. Dayton, Chatsworth, Cal.

WANTED—Bees in eastern North Carolina or South Carolina. I. J. Stringham,
12A2t 105 Park Place, New York, N. Y.

WANTED—by an expert—bees on shares, or to buy bees. Michigan preferred.
Boyd F. Howard, Union Center, N. Y.

FOR SALE.—Choice white clover honey in 60-lb. cans, at $6. per can, f. o. b. Waymart, Pa. Sample 5c. J. D. Hull & Bro., Honesdale, Pa.

FOR SALE.—Bees, honey, and bee-supplies. We are in the market for beeswax and honey.
5Atf Ogden Bee & Honey Co., Ogden Utah.

WANTED—Position with some good bee-keeper, by a young man of good character, who wishes to learn the business.
C. F. Warner, 317 Becker St., Flint, Mich.

FOR SALE—Choice light-amber extracted honey—thick, well ripened, delicious flavor. Price 9 cents per pound in new 60-lb. cans.
1Atf J. P. Moore, Morgan, Ky.

SMALL TREES of the Beautiful Magnolia. Flowers 6 inches in diameter. 1 year, $1.00, and 2 years, $1.50 per dozen, postpaid.
12A2t R. H. Manly, Riverton. La.

INDIAN RUNNER Duck Culture Book. Information that beginners are looking for. (Special price, 50 cents.)
George W. York & Co.,
117 N. Jefferson St., Chicago, Ill.

FOR SALE—Empty second-hand 60-lb. cans, as good as new; two cans to a case, at 25c per case. C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, Ohio.

THREE MONTHS' TRIAL for 15 cts. for the bee-journal that "Grandpa" can read. Large type. New cover design. Eight extra pages. The Bee-Keepers' Review, 230 Woodland Ave., Detroit, Mich.

FOR SALE CHEAP—55-acre ranch, all fenced, 20 acres in cultivation; good orchard, berry-patch, etc. Good well and plenty of good buildings, in a bee-keeper's paradise, with over 100 colonies of bees in dovetailed hives.
12Atf L. L. Skaggs, Llano, Tex.

FOR SALE.—One No. 15 Cowan Reversible Extractor, Root make. Has been used only part of one season; in good condition; price $10.50. Fifty second-hand T Supers in fairly good condition; price 18 cents each, or the lot for $8. M. C. Silsbee,
Rt. 3, Cohocton, N. Y.

COMPLETE COMB HONEY OUTFIT for 1000 colonies, consisting of 460 Colonies of Bees in good condition. Hives with worker-combs, supers filled with sections, etc. Correspondence solicited from parties meaning business. Address, Frank Rauchfuss, 1440 Market Street, Denver, Colo. 1A3t

WANTED—A married man to run on shares, an apiary and vineyard. Have 4-room house, 5 acres irrigated land planted in grapes, figs, apricots, peaches, blackberries, and other fruit; 72 colonies of black and Italian bees in 8 and 10 frame hives; also outfit for extracted and section honey. Good climate for bees. Write me for any further information desired, and give experience, etc.
Address, Wm. Winkler,
Aldama, Est de Chihuahua, Mexico.

THE BEE-KEEPERS' REVIEW.—Have you read it? Just the journal for both the beginner and expert. Tells the former in plain simple language just what the latter are doing. Helps the latter by giving all the latest methods. Send 15 cts. in stamps for three months' trial subscription. Agents wanted in all localities. Subscription price, $1.00 per year. E. B. Tyrrell,
Editor and Publisher,
10Atf 230 Woodland Ave., Detroit, Mich.

Honey to Sell or Wanted

WANTED—Choice extracted white and amber honey in barrels or cans. Send sample, and price delivered f. o. b. Preston.
11Atf M. V. Facey, Preston, Minn.

FOR SALE.—Absolutely pure California sage extracted honey; several cars white and light amber, in 60-lb. tins, two tins to a case. Write us for samples and prices.
Rather Bros., Managers,
Hemet Valley Bee-Keepers' Association,
7Atf Hemet, Cal

South Dakota Convention.—The South Dakota Bee-Keepers' Association will meet at the Auditorium, Sioux Falls, S. D., Thursday and Friday, Jan. 18 and 19, 1912, beginning at 1:30 p.m., Jan. 18.

In addition to the question-box and discussions of various questions, the following topics are on the program:

"Bees on the Farm," by Geo. Webster; "What Size Sections are Best for Shipping?" by W. P. Southworth; "What Size of Hive and Sections Shall We Adopt?" by L. A. Syverud; President's Annual Address, by R. A. Morgan; "Wintering Bees," by Rhoda Carey; "Sweet Clover as a Honey-Plant," by R. A. Morgan; "Our Foul Brood Law—Is it O.K.?" by Henry Ginsbach.

For any further information that may be desired, address the secretary, L. A. Syverud, Canton, S. D.

◆

Wisconsin Convention.—The 33d annual convention of the Wisconsin State Bee-Keepers' Association will meet in the Supervisors' Room at the Court House, Madison, Wis., Feb. 20 and 21, 1912, beginning at 10 a.m. Tuesday.

The last convention provided for premiums of $5, $3, $2 and $1 respectively, for the four best papers, each paper to occupy not less than 5 minutes, nor more than 10 minutes. This is open to all members, and all papers must be handed to the Secretary not later than the first day of the convention, otherwise they will not be admitted for contest. The main feature of our conventions has always been the Question-Box, and we want you to come prepared with questions, or if you can not come, send your questions to the Secretary, and you will hear of them through the printed proceedings. George W. York, President, and N. E. France, Manager and Treasurer, of the National Association, will attend this meeting, and both have promised just what we may expect from them.

Headquarters of the bee-keepers is usually the Simons Hotel—a clean, moderate-priced house. To secure a room, it will be necessary io write a week ahead of time, and enclose $1.00 in your letter.

We invite every member to renew his membership. We invite every bee-keeper to become a member.

Augusta, Wis. GUS DITTMER, *Sec.*

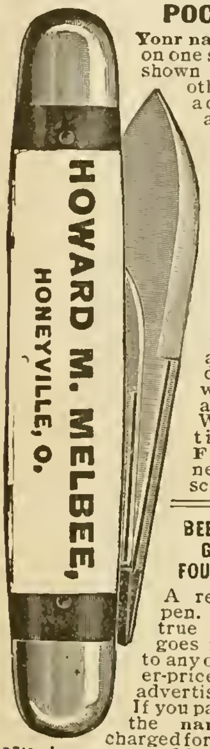
SPECIAL CLUBBING AND PREMIUM OFFERS

In Connection With The

AMERICAN BEE JOURNAL

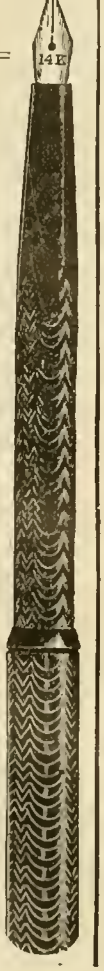
Sample copies free, to help you interest your friends and get subscriptions. If you will send us names of your neighbors or friends we will mail them sample copies free. After they have received their copies, with a little talk you can get some to subscribe and so either get your own subscription free or receive some of the useful premiums below. They're worth getting. **We give you a year's subscription free** for sending us 3 new subscriptions at $1.00 each.

BEE-KEEPERS' NOVELTY POCKET-KNIFE



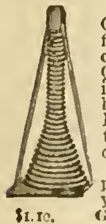
Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.10. With year's subscription, $1.90. **Free** for 3 new $1 subscriptions.

BEE-KEEPER'S GOLD-NIB FOUNTAIN PEN



A really good pen. As far as true usefulness goes it is equal to any of the higher-priced, much-advertised pens. If you pay more it's the **name** you're charged for. The Gold Nib is guaranteed 14 Karat gold, Iridium pointed. The holder is hard-rubber, handsomely finished. The cover fits snugly and can't slip off because it slightly wedges over the barrel at either end. This pen is non-leakable. It is very easily cleaned, the pen-point and feeder being quickly removed. The simple feeder gives a uniform supply of ink to the pen-point without dropping, blotting or spotting. Every bee-keeper ought to carry one in his vest-pocket. Comes in box with directions and filler. Each pen guaranteed. Here shown ⅔ actual size.
Price alone, postpaid, $1.00. With a year's subscription, $1.70. **Given free** for 3 new subscriptions at $1.00 each.

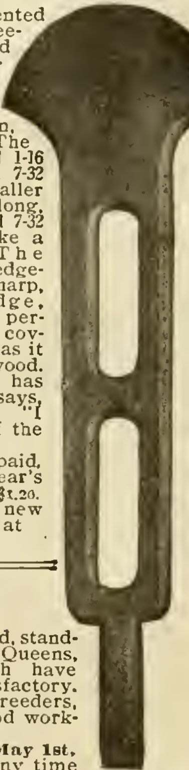
QUEEN-CLIPPING DEVICE



The Monette Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. 4⅘ inches high. It is used by many bee-keepers. Full printed directions sent with each one.

Price alone, postpaid, 25 cents. With a year's subscription, $1.10. **Given free** for 2 new subscriptions at $1.00 each.

IDEAL HIVE-TOOL



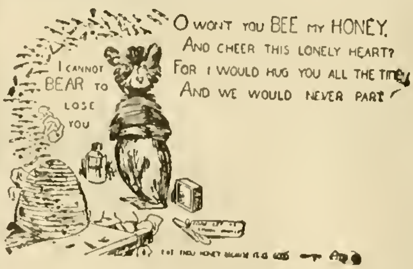
Exactly half actual size.

A special tool invented by a Minnesota bee-keeper, adapted for prying up supers and for general work around the apairy. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide and 7-32 thick. The smaller end is 1 7-8 inches long, 1-2 inch wide, and 7-32 thick, ending like a screw-driver. The larger end is wedge-shaped having a sharp, semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood. Dr. Miller, who has used it since 1903 says, January 7, 1907: "I think as much of the tool as ever."
Price alone, postpaid, 40 cents. With a year's subscription, $1.20. **Given free** for 2 new subscriptions at $1.00 each.

PREMIUM QUEENS

These are untested, standard-bred, Italian Queens, reports of which have been highly satisfactory. They are active breeders, and produce good workers.
Sent only after May 1st. Orders booked any time for 1908 queens. Safe delivery guaranteed. Price, **90** cents each, 6 for $4.50. or 12 for $8.50. One queen with a year's subscription, $1.60. **Free** for 2 new $1 subscriptions.

HUMOROUS BEE POST-CARDS


O WON'T YOU BEE MY HONEY,
AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU

A "Teddy Bear" on good terms with everybody including the bees swarming out of the old-fashioned "skep." Size 3½ x 5½, printed in four colors. Blank space 1¼ x 3 inches is for writing. Prices—3, postpaid, 10 cents; 10 for 25 cents. Ten with a year's subscription, $1.10. 6 **given free** for one $1.00 subscription.

BOOKS FOR BEE-KEEPERS

Forty Years Among the Bees, by Dr. C. C. Miller.—334 pages, bound in handsome cloth, with gold letters and design, illustrated with 112 beautiful half-tone pictures, taken by Dr. Miller. It is a good, live story of successful bee-keeping by one of the masters, and shows just how Dr. Miller works with bees. Price alone, $1.00. With a year's subscription, $1.75. GIVEN FREE for 3 new subscriptions at $1.00 each.

Advanced Bee-Culture, by W. Z. Hutchinson.—The author is a practical and helpful writer. 330 pages; bound in cloth, beautifully illustrated. Price alone, $1.20. With a year's subscription, $1.90. GIVEN FREE for 3 new subscriptions at $1.00 each.

A B C & X Y Z of Bee Culture, by A. I. & E. R. Root.—Over 500 pages, describing everything pertaining to the care of honey-bees. 400 engravings. Bound in cloth, price alone, $1.50. With a year's subscription, $2.25. GIVEN FREE for 5 new subscriptions at $1.00 each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—How the very best queens are reared. Bound in cloth and illustrated. Price alone, $1.00. With a year's subscription, $1.50. GIVEN FREE for 2 new subscriptions at $1.00 each. In leatherette binding, price alone, 75 cents. With a year's subscription, $1.25. GIVEN FREE for 2 new subscriptions, $1.00 each.

Bee-Keepers' Guide, or Manual of the Apiary, by Prof. A. J. Cook.—This book is instructive, helpful, interesting, thoroughly practical and scientific. It also contains anatomy and physiology of bees. 544 pages, 295 illustrations. Bound in cloth. Price alone, $1.20. With a year's subscription, $1.90. GIVEN FREE for 4 new subscriptions at $1.00 each.

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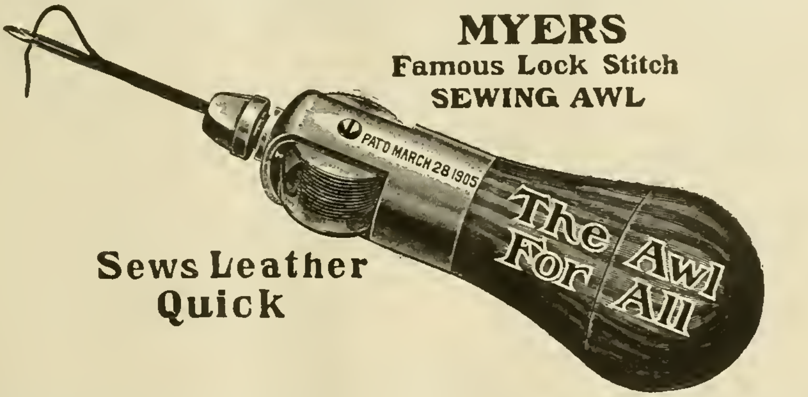

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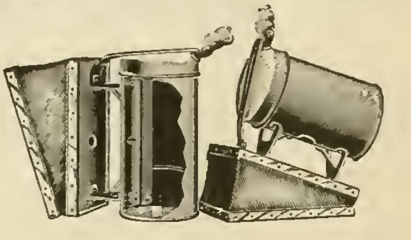
Danzenbaker Victor Bee-Smoke



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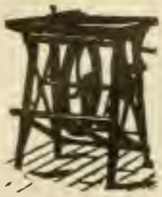

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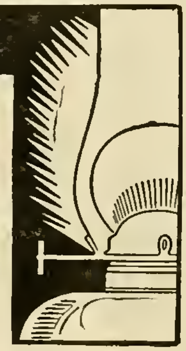

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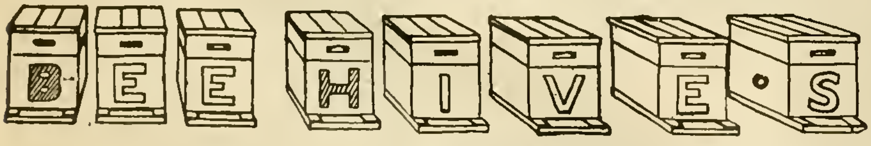

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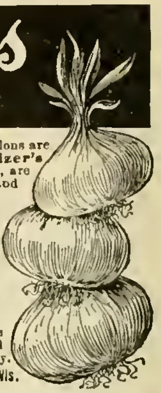

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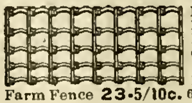

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A Necessity on Every Farm and in Every Household

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This wrench is always ready, and needs no adjustment for any size or shape whatever. You can readily understand its working principle from the illustration.

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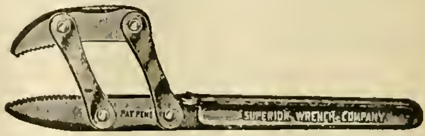

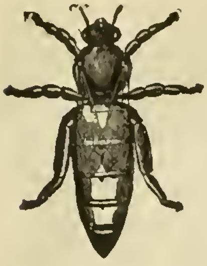

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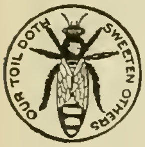
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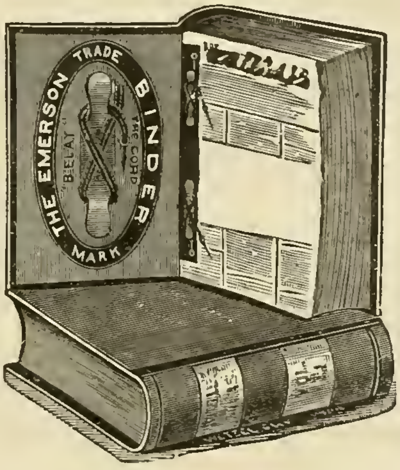
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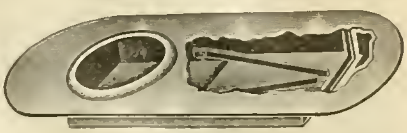

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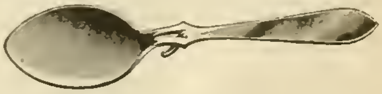

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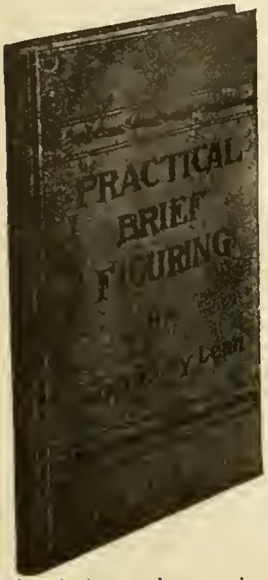

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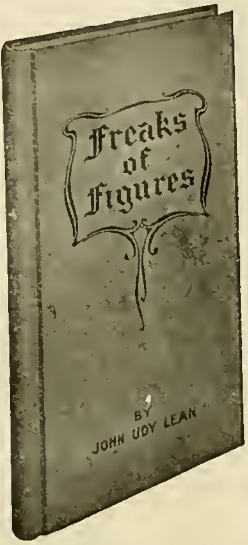

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"First Lessons in Bee-Keeping" SEE PAGE 3

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If you buy Bee-Supplies NOW that you will need in April, you save money at the rate of 12 percent on the $.

THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months—¼ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

ANOTHER reason is that we can serve you better now than three months hence. In a few weeks we will be putting up carload shipments for our dealers and distributing centers, and every effort in our big plant—the largest establishment in the world devoted to the manufacture of bee-supplies—will be directed to filling rush orders. You will be just as anxious for your goods as our other patrons, and will deserve and receive the same attention no matter what the amount of your order may be, but

We can Serve you Better Now

and we want to make it worth your while to place an early order. Try this on a part of your list anyway. Saving at the rate of 12 percent per year ought to interest everybody.

We Manufacture Everything in Bee-Supplies

Get our 1912 catalog which gives descriptions, illustrations and prices on everything from bee-hives to bee-books, from frames to comb foundation. **Get this Catalog NOW.**

THE A. I. ROOT COMPANY,
213 Institute Place, Chicago, Illinois
R. W. BOYDEN, Mgr. (Jeffrey Building) Tel. 1484 North.

Results Count

When you buy **Comb Foundation** you look for **RESULTS.**

The Dittmer Process Comb Foundation is the right **SMELL,** the right **TASTE,** and the right **FIRMNESS** to give **Best Results.**

The Dittmer Process Comb Foundation is so like **Beeswax** the Honey-Bees would **SHAPE** and **MOULD** for themselves, it makes it very acceptable to them. This assures a **Full Capacity Honey Crop,** and remember, to you, Mr. Bee-Keeper, **Honey is Money.**

A **Liberal Discount** Offered on all **Supplies.**
Write for Prices.

Gus Dittmer Company, - Augusta, Wisconsin.

TRAPPERS GET BUSY
BIG MONEY IN FURS

Over ten million dollars will be paid to trappers of fur bearing animals during the coming winter. Any man or boy living in the country can add a goodly sum to his earnings by trapping during spare moments. We furnish ABSOLUTELY FREE a complete Trapper's Guide which tells you the size of trap and kind of bait to use for the different animals, how to remove the skins and prepare them for market. We also furnish the best traps and baits at lowest prices. We receive more furs direct from trapping grounds than any other house in the world, therefore can pay the highest prices for them. Our price lists, shipping tags, etc., are also FREE for the asking. If you are a trapper or want to become one, write to us today. We will help you.

F. C. TAYLOR & CO.
GREATEST FUR HOUSE IN THE WORLD
30 Fur Exchange Building, St. Louis, Mo.

"Griggs Saves You Freight"

- TOLEDO -

Is the point to get Goods **Quick and at least cost.**

6 Per Cent Discount

This month. Send list of Goods needed and let us figure with you. Can take **Honey and Wax** in exchange for Supplies.

S. J. GRIGGS & CO.,
24 N. Erie St., TOLEDO, O.

"Griggs The King-Bee."

Back Vols. American Bee Journal

BACK VOLUMES OF AM. BEE JOURNAL.—We have some on hand, and would be glad to correspond with any one who may desire to complete a full set. It may be we can help do it. Address, American Bee Journal.
117 N. Jefferson St., Chicago, Ill.

An Investment

IN THE

National Orchards Company

WILL BE

SAFE and Highly Profitable.

All necessary conditions for successful Apple and Fruit industry exist at the Company's property.

The Practical Apple-Man will appreciate the fact that the property of this Company is located on the Columbia River, about 70 miles north of the famous Wenatchee Apple District in the State of Washington. The utmost investigation is invited. For particulars write—

National Orchards Company,
117 North Jefferson St., CHICAGO, ILL.

The Campbell System

INSURES your crop against **DROUTH** Our experience in 1910 and 1911 has proved that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 had a crop in 1911.

Don't Take Any Risks for 1912

Campbell's publications explain the system.

Campbell's Scientific Farmer -	**$1.00**
Campbell's Soil Culture Manual -	**$2.50**
Combination Price - - - -	**$3.00**

Address,
Campbell's Soil Culture Co., Lincoln, Neb.

When you write ask about the **Campbell Correspondence School.** 8Atf

TEXAS HEADQUARTERS

Root's Supplies for Bee-Keepers.

Makers of Weed New Process Comb Foundation.

Buy Honey and Beeswax.

Catalogs Free.

Toepperwein & Mayfield Co.
Cor. Nolan & Cherry Sts.,
4Atf **San Antonio, Texas.**

Mexico as a Bee-Country

B. A. Hadsell, one of the most experienced and largest bee-keepers in the world—has made six trips to Mexico, investigating that place as a bee-country, and is so infatuated with it that he is closing out his bees in Arizona. He has been to great expense in getting up a finely illustrated 32-page booklet, describing the tropics of Mexico as a Bee-Man's Paradise, which is also superior as a farming, stock-raising and fruit country. Where mercury ranges between 55 and 98 Frost and sun-stroke is unknown. Also a great health resort. He will mail this book FREE by addressing. 7A12t

B. A. Hadsell, Lititz, Pa.

Please mention Am. Bee Journal when writing.

COST SALE

Of **BEE-KEEPERS' SUPPLIES for the next 4 months.** Too big Stock to carry over. Write your wants; I will make price to suit. Sept. 26, 1911.

W. D. Soper, 323 and 325 Park Ave. **Jackson, Mich.**

Closing Out Offer

We Have Some Copies Left of the Book

"Bees and Honey"

By Thomas G. Newman

bound in cloth, that we offer cheap to close out. It contains 160 pages, and is bound in cloth. It used to be a one-dollar book, but we will mail them, so long as they last, at 50 cents each; or with the American Bee Journal one year—**both for only $1.20.** Surely this is a bargain. The book is well illustrated, and has some good information in it, especially for beginners. Address all orders to

George W. York & Co.,
146 W. Superior St., Chicago, Ill.

The Olive—Its Cultivation and Commercial Value

By Col. E. S. WEEDEN

This emblem of peace and prosperity is one of God's priceless gifts, ministering to man's physical, mental and financial advantage.

It is the poor man's food, and the rich man's luxury.

It is also the emblem of immortality—it never dies of old age. There are olive trees in Rome now over 2000 years old, still flourishing and fruitful. If the identical tree from which the dove plucked a leaf to carry to Noah has not been destroyed by violence, we assume it is still living, and has been bearing fruit all these ages.

It is a sturdy, vigorous grower, and when planted in stony places (if all else is satisfactory) it will wrestle with the rocks and wring from scanty soil sufficient nourishment to insure life, growth and fruitfulness. It will live where all else will die of thirst. Yet such conditions are not to its liking, and if neglected it will be extremely slow in development. For example, in the Mediterranean country—its native land—the grower expects to wait 14 years for a harvest, while in Butte Co., Cal.—its paradise—under kindly conditions it will smile its thanks with a showing of fruit the third year, and the fourth will give a harvest worth gathering. Doubtless its slow development in the first instance is due partly to a less favorable location, but largely to less intelligent care.

The olive finds a difference between the culture given by an Italian, and the intelligent industry of a citizen of California.

This tree will grow almost anywhere in our State, yet it has a clear-cut preference as to soil and location.

In the Coast counties and Southern California it suffers greatly from the "black scale," requiring a vigorous, persistent, expensive battle for its life. But in the warm interior valleys, and deep, rich, red soil of the foothills of Butte county, it has no enemies of any kind.

The "black scale pest" can't survive our summers—too much warm sunshine and absence of humidity.

It is unwise to plant any fruit where it will not be *at its best*.

The sun does not shine on a spot of earth anywhere, that will produce such quantities of olives and of such superior quality as those grown here.

With these great natural advantages, and with intelligent, industrious care (with us), the olive is one of the largest and most speedy "money-makers" of the fruits of our wonderful State. When 9 or 10 years old a net return of $200 an acre is easily within the reach of any man, and this return will be steadily increased for many ages.

Some orchards now 20 years old give returns of $600 to $800 an acre; and still older groves, a yet larger result.

After the sixth year the olive requires comparatively small care. An average man of average intelligence and industry could care for a grove of 40 acres in Butte county (where there is no "scale" to fight), except at harvest time. But there is one great advantage in harvesting, it extends over a period of a month, and if crowded, the "buyer" will take the fruit on the tree, doing his own gathering. This is because we have in Oroville, The Ehman Olive Co., the largest and best equipped establishment of its kind in the world, with a well-instructed force ready to gather with great speed all the olives that can be bought "on the trees."

These people are the "discoverers" of the art of pickling *ripe* olives. Formerly olives for pickling were gathered when green. Being hard—because green—they were not so easily bruised—bruising spoils them. To cure ripe olives successfully, great care is required in gathering and in the curing process. It is also necessary that the olives be grown on such soil as insures a firmness of texture, and such soil also insures the highest food-qualities, and the most exquisite flavor. It is because of our soil and climate, and because of the skill and intelligence in handling and curing them, that "Ehman's Oroville Ripe Olives" are famous the world over.

"OLIVE BRANCH"—WITH OLIVES.

Not merely in our own country, but also in England, France, Germany and Italy, the high-grade hotels, the high-toned clubs, the rich and the titled, all want Oroville Ripe Olives.

Our factory people tell us the only reason they do not sell ten times as much of this fruit as they do *is because they can't get the fruit.*

There is quite as much difference between ripe and green olives as there is between ripe and green peaches. Don't for a moment imagine you have tasted "the flavor of an olive" until you have eaten some of Ehman's Ripe Oroville Olives.

Can there be an over-production of "pickled ripe olives?" I strongly suspect not.

We are now importing over $6000 worth of olives every year—simply because our people can not grow enough of them.

We have just discovered the value of olives as food, and as a result the demand the past 5 years has increased enormously. Even our natural increase in population would exceed all possible increase in growth of this fruit.

Remember, olives have been grown since the days of Moses, and history does not report a single instance of "over-production."

Remember, further, that the olive is an "arid fruit." It can not be grown in commercial quantities anywhere in the United States outside of California.

The only danger that confronts the intending grower is *that he won't plant enough of them.*

Think of the kind of an income "your successors" would have in 20 years, if you would plant 40 acres of olives—say at least twenty-five thousand dollars a year. Even 10 acres with an income of $6000 a year *would look good to some people.*

Oroville, Calif. COL. E. S. WEEDEN.

[If the reader is interested to have further information, write to Col. Weeden. He will be glad to reply direct to any questions.

Col. Weeden kindly sent us a gallon of the Ehman Oroville ripe olives recently, and they surely are fine—ever so much better than the green olives, *we* think.—EDITOR.]

WANTED
WHITE
HONEY
Both COMB and EXTRACTED
Write us before disposing of your Honey Crop.
Beeswax
—WANTED—
HILDRETH & SEGELKEN,
265-267 Greenwich St.,
NEW YORK, N. Y.

STRAWBERRIES
I grow Strawberry, Raspberry, Blackberry and other small fruit Plants, Grape Vines, Shrubbery, etc. My FREE catalog tells the truth and and quotes fair prices for good stock true to name. If interested, write today.
W. F. ALLEN,
17 Market Street, Salisbury, Md.

Please mention Am. Bee Journal when writing.

Honey And Beeswax

Chicago, Dec. 28.—Sales of honey have been slow during the month of December, and are likely to be so for some little time in January. The Western honeys do not give the satisfaction that the honey produced in the neighborhood does, for the reason that the people are accustomed to a flavor they do no not find in Western honey. Prices on fancy comb range from 17@18c per lb., and other grades are from 1@5c per lb. less. Extracted, from 8@9c for white, and ambers are ranging from 7@8c, according to flavor and kind. Beeswax is steady at from 30@32c, according to color and cleanliness.
R. A. Burnett & Co.

Cincinnati, Dec. 28.—The market on comb honey has fallen off somewhat, only demand for fancy white selling in retail way at $4.00, to jobbers at $3.60 to $3.75, according to quantity. Extra white extracted in 60-lb. cans at 10c; light amber in 60-lb. cans at 8½c; amber in barrels, 7@7½c. Beeswax in fair demand at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. Weber & Co.

New York, Dec. 28.—Trade is rather quiet just now, which is generally the case around the holidays. Stocks of comb honey are rather light, on account of the short crop, and receipts are only of moderate size, and we do not expect any more large shipments from now on. Prices hold firm at former quotations. Extracted honey—while white clover is scarce, there seems to be an abundant supply of all other grades. We expect to see lower prices from now on. For the present we quote: California white sage, 9c per pound; light amber sage, 8c per pound; white alfalfa, 8@8½c; light amber alfalfa, 7@7½c; buckwheat, 7@7½c. Beeswax quiet at 30c per pound. Hildreth & Segelken.

Kansas City, Mo., Dec. 28.—The demand for honey still continues to be light, and we don't look for a much better demand until after the holidays. January and February are generally good honey months. We quote: No. 1 white comb, 24-sections, $3.25; No. 2, $2.75@$3.00; No. 1 amber, $3.00; No. 2, $2.50@2.75. Extracted, white, per pound, 8½@9c; amber, 8@8½c. Beeswax, 25@28c.
C. C. Clemons Produce Co.

Indianapolis, Dec. 28.—Demand is good for best grades of honey. White comb sells for 18c in 10-case lots, finding prompt and ready sales. Amber grades in slow demand with lower prices. Extracted seems to be plentiful, and is selling at 11@12c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 31c.
Walter S. Pouder.

Denver, Dec. 5.—We quote our local market in a jobbing way as follows: No. 1 white comb honey, per case of 24 sections, $3.15; No. 1 light amber, $2.90; No. 2, $2.70. White extracted, 9c per pound; light amber, 8c; strained, 6¾@7½c. We pay 26c cash, and 28c in trade, for clean, average yellow beeswax delivered here.
The Colo. Honey-Producers' Ass'n.
F. Rauchfuss, *Mgr.*

Cincinnati, Dec. 28.—The demand for honey is rather good, considering the great quantity that is still in the West unsold. We continue to sell fancy comb at $3.75 to $4.00 a case; fancy extracted honey at 9@11c a pound, according to the quantity and quality purchased; while for amber extracted in barrels we are getting from 6½@7½c a pound. We are paying 30c a pound delivered here for choice, bright yellow beeswax absolutely free from dirt. The Fred W. Muth Co.

San Francisco, Dec. 30.—The honey report at this time shows but little change; the prices are about the same as they were last month. Extracted, water-white, at 9@10c per pound; 8@8½c for light amber; 6½@7½c for amber, and 5@5½c for dark comb honey; water-white, 15@16c; lower grades, 8½12c. Very few large sales have been made, but the demand is not very brisk, as buyers are slow in taking up shipments.
J. C. Frohliger.

Boston, Dec. 28.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. Blake-Lee Co.

"Southern Bee-Culture" is the name of a booklet written by J. J. Wilder, perhaps the most extensive bee-keeper and honey-producer in the whole State of Georgia. It is a real hand-book of Southern bee-keeping, with methods so simply described that they are easy to carry out. Every bee-keeper, especially in the South, should have a copy of Mr. Wilder's booklet. He conducts apiaries by the dozen, and produces many tons of honey every season. He tells in careful detail just how he does it. The price of this booklet is 50 cents, or we now club it with the American Bee Journal for a year—both for $1.30. Send all orders to the American Bee Journal, 117 North Jefferson St., Chicago, Ill.

A Happy New Year to Bee-Keepers Everywhere

IN HIS DEPARTMENT "The Busy Bee," in December Farm Journal, D. Everett Lyon, bee-keeper and author, has to say of the advantages of early buying of bee-supplies:

"I have made it a practice to purchase my supplies during the winter for the following season, for two reasons: First, there is a discount given by the supply houses, who are anxious to get their customers supplied now rather than when they are naturally rushed during the spring; and, second, because during the leisure time of winter I can put the hives and sections together."

There's a Point For You

Not only is it more practical to buy bee-supplies during the winter, but there's quite a little profit to be had for your foresight.

Buy ROOT'S BEE-SUPPLIES here in January, and you save 3 percent. These discounts apply on practically everything listed in the big **Weber Line.**

You save freight by ordering from Cincinnati—and you save the interest on one dollar for a whole year by investing in bee-supplies in January. Just bear these facts in mind.

C. H. W. Weber & Co.

2146 Central Ave. **CINCINNATI, OHIO**

Less 3 Percent Discount During JANUARY

"Falcon"

The ⋈ Standard ⋈ Bee-Keepers' ⋈ Supplies

KANSAS CITY, MO.

The Freight Center of the Western States

A complete stock of "**Falcon**" hives, sections, foundation, smokers, shipping-cases, extractors, etc., is kept in stock at this centrally located house for prompt shipment at a great saving of freight. "**Falcon**" goods, hives and supplies made right, may be obtained from this point less the maximum early order discount. Write for Red Catalog and send list of 1912 requirements for quotation to C. C. Clemons Bee Supply Company, 130 Grand Avenue, Kansas City, Mo.

CHICAGO, ILL.

The Freight Center of the Middle States

Our branch, W. T. Falconer Mfg. Co., 117 North Jefferson St., Chicago, Ill., is **the only bee-supply house in the business section** of this metropolis of the States. Surrounded on every hand by freight and express depots we are pre-eminently fitted to take care of your wants, making shipment by the cheapest and most direct route to you........and there is never any charge for drayage to depot. Let us quote you less early order discount from this freight-saving center.

"falcon" dealers are in every State and encircle the Globe. Write for name of nearest one to you.

W. T. Falconer Mfg. Company,

"Where the Good Bee-Hives Come From"

Factory: Falconer, N. Y.

117 North Jefferson Street,
CHICAGO, ILL.

You Want a Home

WHERE pure water is plentiful, comes when you wish, and stays when you will;

WHERE cyclones are unknown, and blizzards impossible;

WHERE crops never fail from drouth, and the unhoused harvest is never damaged by storms;

WHERE your stock can feed and fatten on pastures that are always green; and you can work in your fields with profit and pleasure every day in the year—except Sunday;

WHERE you can grow to perfection all the pleasant fruits, and all else that can contribute to make your home a paradise;

WHERE you can raise two crops of some things (on the same ground the same season), and continuous crops of other things, giving you "a money harvest" to sell every week in the year;

WHERE "sunny days" cover two-thirds the time, and yet sunstroke or "death or damage from heat" are unknown;

WHERE bees banquet in fields of never-fading flowers, securing rich stores of honey—which they do not consume "in wintry hours;"

WHERE you can grow practically all the nuts and fruits of commerce to perfection and in enormous quantities. Remember that Apricots, Almonds, Raisins, Figs, Olives and **Washington Navel Oranges** can not be grown in commercial quantities anywhere in the United States outside of California. Hence, a good price is assured, and over-production impossible.

YOU WANT A FAIRY FARM

WHERE you can (with the help of your boys) take the best care of it—thus forever ending the torturing ghost of "hired help;"

WHERE "your boys" will get rich on berry-patches, and "the women-folks" with poultry—as a by-product;

WHERE you can get more net cash every year from ten acres than can be wrested from a quarter section of the best farm land in the Mississippi Valley, and all this while escaping the lonesome isolation and dreary drudgery inseparable from the larger farming.

You want to know all about this wonderful land. You can secure full and accurate information by writing to

Col. E. S. WEEDEN, OROVILLE, CALIF.

Stating you saw this advertisement in the American Bee Journal. Reference—Editor American Bee Journal.

February, 1912 Volume LII. No. 2

AMERICAN BEE JOURNAL

LIBRARY of
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College

The Oldest Bee-Paper in America

250-Colony Out-Apiary of A. G. Woodman Co., of Michigan.

Part of 300-Colony Apiary of John F. Otto, of Wisconsin.

The
ALFALFA
APIARY

Mass Agl College apr17
Library Amherst, Mass

Oklahoma State Fair Apiarian Exhibit of Geo. H. Coulson—(25 feet long and 14 feet high.)

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
117 N. Jefferson Street, Chicago, Ill.

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America (except in Chicago, where it is $1.25), and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec11" on your label shows that it is paid to the end of December, 1911.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 4 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 6th of each month.

(Organized 1870.)

National Bee - Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to pramote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

Officers

President—George W. York, Chicago, Ill.
Vice-Pres.—Morley Pettit, Guelph, Ont. Can.
Secretary—E. B. Tyrrell, Detroit, Mich.
Treasurer—N. E. France, Platteville, Wis.

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Franklin Wilcox, Mauston, Wis.
J. E. Crane, Middlebury, Vermont.
J. M. Buchanan, Franklin, Tenn.

Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.

Send Dues to the Secretary, E. B. Tyrrell.

Can't Do Without the Bee Journal.

MESSRS. GEORGE W. YORK & CO.

Gentlemen:—Enclosed you will find my renewal for another year to the "Old Reliable." I simply cannot do without your paper, and I believe if I could not get it I would certainly have to give up keeping bees, so closely is it linked with my bee-keeping life. You can certainly count on me for life, as I get more pleasure and profit out of a single number of your paper than a whole year costs.

WALTER E. ATKINSON.
Baltimore Co., Md., Sept. 14, 1910.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50 ; 3 for $2.50 ; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co , Kan , July 15. A. W. SWAN.

GEORGE W. YORK & CO :—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted. to force them to swarm. they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22. CHAS. MITCHELL

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W YORK & CO.:—The queen I received of you a few days ago came through O. K . and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. McCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

George W. York & Co., Chicago, Ill.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee - Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG

Will tell you all about our

Best Bee-Keepers' & Poultry Supplies

Sold at lowest living prices. We handle the Best Sections in the World—the August Lotz Sections at Lotz prices. **Three Carloads** of Goods on hand with 2 more coming.

Drop us a card and we can please you.

Catalog Free. **H. S. Duby, St. Anne, Ill.**

Heard Over the Fence One Day

Brown—"I say, Jones, I wish you would tell me where you send your **HONEY,** you seem to get such good results."

Jones—"Sure, glad to. **THE FRED W. MUTH CO., 51 WALNUT ST., CINCINNATI, OHIO,** gets every pound I produce, and I always receive my money the day the shipments arrive. They buy my **BEESWAX,** too. And, by the way, they handle the finest **BEE-SUPPLIES** on the market—Falconer Manufacturing Co.'s make. Write them for a **Catalog**—am sure they will be glad to send you one."

Oats

Twenty odd years ago, Salzer's White Bonanza Oats won the world's prize of $500.00 offered by the American Agriculturist for the heaviest yielding oats.

Our new Rejuvenated White Bonanza Oats gave during 1910 and 1911 sworn-to yields ranging from 80 to 259 bushels per acre. Does well everywhere, not so particular as to soils and climes.

For 10c Stamps We Mail

A package of our Famous Oats, together with a lot of other rare farm seed samples, as also our Mammoth Catalogue, if you ask for same.

JOHN A. SALZER SEED CO., 210 S. 8th St., LaCrosse, Wis.

Please mention Am. Bee Journal when writing.

HENS LAY AND PAY
BY THE PHILO SYSTEM

FREE Booklet by E. W. Philo, entitled "A Little Poultry and a Living." Or New 96-page book, "Making Poultry Pay," 10c. Both books and the new enlarged edition of the Philo System text-book, $1.00, or all three books with our monthly magazine, Poultry Review, one year, $1.50

E. R. PHILO, 42 North Ave., Elmira, N. Y.

Please mention Am. Bee Journal when writing.

STRONGEST FENCE MADE
FROM FACTORY DIRECT TO FARM

26-inch Hog Fence, 15c.
47-inch Farm Fence, 23½c.
60-inch Poultry Fence 30c.
80-rod spool Barb Wire, $1.40

Many styles and heights. Our large Free Catalog contains fence information you should have.

COILED SPRING FENCE CO. Box 89 Winchester, Ind.

Please mention Am. Bee Journal when writing.

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NEWMAN DADANT

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L.L. LANGSTROTH
CHAS. DADANT

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EDITORIAL COMMENTS

Bee-Keepers' Conventions

A good deal has been said, one time and another, as to what is the best way to arouse interest in those who attend conventions, and to hold that interest. The matter is of so much importance that it would not be a bad thing to have a pretty general discussion regarding it.

When two bee-keepers meet, small time is likely to elapse before they begin to talk bees. If a third member is added to the number, the interest is likely to be greater than with only two, and in general an increase of numbers means an increase of interest. Yet when the number becomes sufficiently great there is likely to be some confusion, and it becomes desirable, if not absolutely necessary, to have some organization with a presiding officer. Thus, instead of a chance meeting, we have a convention.

Just what is the best way to fill up the time of a convention to get the most pleasure and profit out of it is not easy to say. What may be best for one time and place may not be best for another. Based on the idea that two or more bee-keepers are always interested in talking bees, the time may be taken up with discussions of a more or less conversational character, a question-box furnishing topics for discussion. So it has been the case in some conventions that the entire time has been taken up with the question-box.

There is some danger that when the question-box holds a prominent place there may be more or less loose talk without very much careful thinking. A written paper gives more chance for careful preparation, and in some conventions such prepared articles take up most of the time. Some, however, will object that the proper place for written papers is in the bee-periodicals, and that they can get more good out of such reading in the quiet of their own homes. This objection has all the more force if the bee-keeper is under considerable expense for railroad fares and hotel bills.

As a compromise, some advocate a short paper to introduce a topic, to be followed by extempore discussion. The danger in this case is that the paper is likely to be exhaustive rather than introductory. Also there is danger that instead of short papers the papers may be so long as to take up the whole time, leaving no time for discussion.

There is no denying that at a convention those who attend desire especially those things that they can not get elsewhere. Prominent among these is the social feature—the meeting of other bee-kee-keepers face to face—and also the oral discussions. Much, very much, depends upon the presiding officer as to whether extempore discussions shall be profitable or not. Timely suggestions on his part, and more or less strict holding to the topic in hand, may make all the difference between failure and success.

Latterly there has been a tendency toward thinking that less time should be taken in discussing matters directly in the line of practical management of bees, and more as to other matters of organization. More business and less bee-talk. It is a question of no little interest as to whither this may grow. Experience teaches, and in at least one case it has turned out not entirely as expected. Speaking of the Ontario convention, J. L. Byer says in Gleanings in Bee Culture:

> The convention was strictly a *business* one, and it was a question in the mind of some if this feature was not overdone a bit. While we may argue (as the writer has often done) that details of management, etc., should be discussed in local conventions, yet the fact seemed apparent at our late convention that many come to get information who are not as yet interested in freight-rates, co-operation, and a host of other questions that the more seasoned bee-keepers no doubt rightly think should be paramount. This fact was made clear by the lively discussion that followed any subject or question that would occasionally crop up concerning actual management connected with the apiary. To my mind it seems clear that we must be careful in future conventions, and not jump too quickly from one extreme to another, else there be danger of cutting out the attendance and interest at our meetings.

The whole subject is one of very great importance, and there is very much left to be said. Those who have had experience in attending conventions, and have given the matter careful thought, may do well to give to our readers their views as to what helps to make a good convention. Our columns are open to them.

Races of Bees

In an address before the great German convention of bee-keepers, reported in Bienen-Vater, Dr. Weygandt says that the original honey-bee was the Caucasian, and from this all others are derived. Even today it shows the greatest inclination to variation, and from it the breeder may obtain almost whatever he wants by careful and continuous selection.

He thinks that each race of bees is best adapted to its own locality, a view in which he by no means stands alone. In other words, the native bee is best. However it may be in other countries, it will hardly do to apply that doctrine too closely, if at all, to this country. Properly speaking, we have no native bee. The black bee was here first, it is true; but the black is really an importation comparatively recent. Because it was first does not at all argue that it is the best. The proof of the pudding is the eating; and the hundreds who had the opportunity, when Italians were introduced, to try blacks and Italians side by side, were practically a unit in saying that more honey could be obtained with Italians.

Board of Directors' Meeting

On another page Secretary Tyrrell, of the National Association, gives a somewhat condensed report of the proceedings of the meeting held by the new Board of Directors at Detroit, Jan. 23, 1912. We trust that all our subscribers will read that report very carefully, and try to realize what it will mean to the bee-keeping industry of America to do the several things there outlined.

Perhaps a few comments on the Detroit meeting of the Board of Directors will be appreciated.

DIRECTOR E. D. TOWNSEND.

In order to have all the good counsel possible, Vice-President Pettit, of Canada, and Treasurer France, of Wisconsin, were requested to meet with the Board. (The President is *required* to preside at all meetings of the Board, according to the new Constitution.)

Owing to illness, Director Wilcox, of Wisconsin, was unable to be present; and, unfortunately, Treasurer France was not present also. All the other Directors and officers were there. The meeting was held at the home of Secretary Tyrrell, and began at 2 p.m., continued till 6 p.m., and then Mr. Tyrrell generously invited all down to a bountiful supper prepared by his good wife. And what we seven didn't do to that Michigan feast wouldn't be worth mentioning! It was a hungry "bunch," and the honey disappeared with the rest of the good things. (We may say, confidentially, that the secret came out then and there as to Mr. Tyrrell's tremendous energy, resourcefulness, etc. It's greatly due to the good cooking, and the inspiration and helpfulness of his wife's all-around efficiency.)

After supper the seven returned to the "upper-room," and again went at the perplexing problems connected with making the National Bee-Keepers' Association a far more successful institution than it has ever been in the past, though it has done most excellent service.

The Board labored until 10:30 p.m., when it was thought that all had been done that could be done at its first meeting, and probably another meeting will not be necessary until the first one of delegates to be held a year from this month.

We had hoped to include the picture of Director Buchanan, but it did not arrive in time to appear with the rest in this issue.

We want to congratulate the National Association's membership upon the personnel of their Board of Directors. Some years ago there was considerable criticism in some quarters because several of the directors were bee-supply dealers, though *we* couldn't see that it interfered with doing their duty as directors. But now all of the directors are *bee-keepers* from start to finish. Mr. Townsend is one of Michigan's largest operators of bees; Mr. Foster and Mr. Buchanan are not only extensive bee-keepers, but State inspectors of apiaries for Colorado and Tennessee, respectively. Mr. Crane is perhaps the largest bee-keeper in Vermont, and Mr. Wilcox is one of the most prominent bee-keepers of Wisconsin. Surely all of them have the best interests of bee-keepers at heart, and will do their utmost so to manage the business affairs of the National Bee-Keepers' Association as to make its membership one of the very best investments any bee-keeper can possibly find.

Co-operative Apiarian Experiments in Canada

Canadian bee-keepers are to be congratulated on the activity of their Provincial Apiarist, Mr. Morley Pettit. Instead of conducting a number of experiments himself on a small scale, he took up a single experiment and conducted it on a large scale by means of Co-operative Experimentation.

A very meaty circular of 9 pages was sent out to all the bee-keepers of Ontario whose addresses could be obtained, proposing the united carrying out of an experiment which was indicated by the striking title, "Natural Swarming: How to Prevent It." In this was contained some information of the most elementary character, such as would be needed by one without knowledge of bee-keeping, and also matter that would not fail of the most interested attention from practical bee-keepers, discussing the general matter of swarming.

Sooner or later every practical bee-keeper asks the question, "What is the cause of swarming?" This question is not answered in the circular, but "some causes *of swarming*" are thus given:

1. The supers are crowded with honey; there is still plenty of nectar in the flowers; but the bees have no comb space in which to store it.
2. The colony has a queen with great egg-laying powers; but the brood-chamber is too small for her, and has become crowded with honey and pollen. She has an egg or larva in every cell, and young bees are not hatching rapidly enough to give her room to lay, yet she must be idle or seek a new home with a wider field of usefulness.
3. The secretion of nectar in the flowers is continuous but slow. The queen is constantly stimulated by the incoming sweet to lay, while the demands of the harvest are so light that the workers live much longer than is usual in a heavy harvest. The hive becomes over-populated and crowded.
4. The hive is poorly ventilated, or sits in the sun.
5. Bees often swarm when they are superseding an old queen.

An application blank was enclosed, to be filled out and returned by those making application for the experiment. The applicant was required to promise to conduct the experiment according to directions as far as possible, and to report on it by filling out a report blank in the fall, whether the experiment was successful or not.

To producers of extracted honey was sent a sheet entitled, "Experiment No. 1." The instructions in this directed that at the time of spring cleaning an even number of colonies should be chosen, not less than 10 nor more than 20. These to be as nearly alike as possible in every way, specific instructions being given as to the particulars in which they should be alike. Then the experimental group was to be divided into two equal lots, Lot A and Lot B.

Lot B was to have precisely the same treatment the whole apiary would have received if the co-operative experiment had never been heard of. For the management of Lot A the following instructions were given:

> Let us suppose that Monday is "Apiary Day." Every Monday after the beginning of fruit-bloom each colony of Lot A is examined to note the progress of its development and give necessary treatment.
>
> WATCHING FOR SWARMING-IMPULSE.
>
> When clover honey starts coming in June, the watch for swarming-impulse begins in earnest.
>
> It is necessary for one who is beginning the study of swarm prevention, to look at every brood-comb of every hive once a week for the next few weeks until the swarming season is past. This seems like a lot of work; but it does not take nearly so much time as one would think. The stirring up the bees makes them work all the better, and it is a great satisfaction after one day spent in the apiary to be able to go off about other work and know there will not be any swarming for a week at least. When one compares this with the worry of fussing with swarms and losing them before and after they are hived, the work of the weekly examination sinks into insignificance.
>
> GIVING THE QUEEN ROOM.
>
> When on the weekly examination we find cell-cups with eggs, it is time to start giving the queen room Remove a comb from the outside of the brood chamber, and put an empty worker-comb or frame of wired foundation in the center of the brood-nest. If the colony is quite strong, or if the queen-

DIRECTOR WESLEY C. FOSTER.

cells contain larvæ, it may be given two or three such frames. All queen-cells with eggs or larvæ must be destroyed. To miss destroying even one, may mean that it would be developed and a swarm issue. In every case alternate foundation or empty combs with brood.

DIRECTOR FRANKLIN WILCOX.

In removing combs from the brood-chamber, follow this order: First empty combs and combs of honey until they are out, then sealed brood. If the empties are clean and the honey white, place them in the extracting supers of the same hive (if they will fit), also the brood unless it is needed for making increase or building up weak colonies.

When queen-cells for swarming are found far advanced, the final remedy is to take away all the combs of brood but the one which has the least brood, and give empty worker-combs or frames of wired foundation.

Of course the object of the experiment was to secure a comparison of the results obtained from Lot A as compared with those of Lot B.

To producers of comb honey was sent "Experiment No. 2." In this the following ground is held: "About the only way to avoid having natural swarms is to make artificial ones." So instructions are given for weekly examinations, just as was given to the producers of extracted honey, and then when eggs are found in queen-cells, and indications point to swarming a shaken swarm is to be made. That is, the brood-combs are taken away from the hive, most of the bees having been shaken from them, leaving in the old hive the queen, most of the bees, one worker-comb, and enough frames to fill out the hive, these frames containing half-inch starters of foundation. Of course, using such shallow starters is open to the objection that drone-comb will be built, and concerning this Mr. Pettit says:

One disadvantage of hiving on starters is the great quantity of drone-comb that will be built in the brood-chamber. This can not very well be avoided. Owing to the uncertainty of the honey season, and the necessity of having sections well filled we must crowd the super work by giving little or no material to build on in the worker-chamber, and the excess of drone-comb is the result. As soon as the white honey is ready to come off, the frames containing most drone-comb must be removed from the brood-chambers and worker-combs, or full sheets of foundation, put in their place. Then if the fall honey-flow is not sufficient to fill these up for winter, feeding can be resorted to.

Some one may say: "But this can hardly be called experimenting, for these plans of management are in effect well known to experienced bee-keepers." To a certain extent this is true, yet it is probably also true that the great majority of bee-keepers have never tried the plans given, and to them the carrying out of such plans in comparison with their previous plans would be experimenting in a most emphatic manner.

In his report of the results of this co-operative experimenting, Mr. Pettit says reports were received from 62 bee-keepers, 24 of these reports being quite full. As might be expected, some of the bee-keepers were better satisfied with excellent plans that they had previously used. On the whole, however, there was a gain. Summing up the whole of Lot A and of Lot B, it was found that only 18 percent of Lot A cast prime swarms, as against 38 percent of Lot B.

As a result of this control of swarming and the extra attention given to the colonies of Lot A, the average return in honey was 83 pounds per colony as against 75 3 pounds per colony of Lot B. In addition to this, there was an average number of 7 combs per colony built in Lot A, and 5 combs per colony in Lot B.

The likelihood is that this increase of 10 percent in the amount of honey obtained will stimulate others who are not doing as well as they might, and Mr. Pettit will be watched with interest from this side the line to see what further he may do.

Repression of Swarming

On page 263, of the American Bee Journal, was given a brief review of a pamphlet printed in Germany whose title, translated into English, is "Why Do So Many Apiaries in the Villages Stand Empty?" A correspondent who has this pamphlet is especially interested in one chapter, and writes as follows:

DR. MILLER:—I have a German pamphlet entitled, "Warum Stehen auf den Doerfern so viele Bienenhuetten leer?" I understand in every way German as well as English, and think the publication a very good one. A part of same especially of interest to me is under the heading: (3 "Excessive Swarming Must Be Prevented," and a way is set forth which includes increase, which, it seems to me, I have not seen suggested elsewhere in its entirety, and I would be pleased not only to have your opinion of it, but hope to see a further discussion thereof in the American Bee Journal by others as well. I translate as follows.

"Nothing is easier than to suppress swarming and bring about increase artificially. It is done as follows: When the colonies are in their highest State of development [he says end of May; I would say for my latitude, end of April ?], dequeen the best colony as apparent by wealth of honey, number of bees, etc. Make use of the queen elsewhere. The colony will make a lot of queen-cells, every one of which will be well cared for, the same being in its fullest strength or vigor Shortly before the young queens are to slip out, divide the colony into as many nuclei as there are queen-cells and frames of brood. Six to 8 nuclei may be expected, with good weather, the young queens will be mated after 3 days, and soon begin to lay. At this stage frames of brood are to be taken away from other colonies in order to bring about their swarming proclivity, and these same frames are given to the nuclei so as to strengthen them. This is of great help to the latter, and the strong colonies readily bear up with the deprivation. Frames of foundation [full or starters ?] are given in place of the brood taken away, which will at once be drawn out, and as long as such a colony has that to do, or to care for uncapping brood, it will not give off any swarm."

The author further asserts that a good point about such nuclei is, that their queens can easily be observed and tested as to their value. He denotes queens by ooc year cutting the right wing, and the next the left one. He further says that the nuclei often need feeding; viz., with honey and pollen.

So much from the pamphlet.

In reply to questions I put by mail to the author, he has answered:

"It is necessary carefully to remove all and every bee from the frames of brood, before giving same to nuclei, as such might otherwise kill the young queen. As the 'ripe' frames of brood will give to the nuclei young colonies thousands of young bees within a few days, a strong colony should soon result. More than one frame of brood should not be given at a time, because the bees can not care for more; the cells of the frame of brood must all be capped, as the young bees of the nuclei can not do this, not as yet flying out 'A *strange bee* on the *frame* of *brood* to *be given might kill* the queen."

My idea is that one might follow this method when both swarming is to be prevented and increase made, by working an apiary in series of 10 or 12—*i. e.*, for every unit of such number, dequeen one of the most vigorous colonies and proceed as stated. It seems to me that the mode of procedure first given is worthy of wide discussion, and, so far as I am concerned, I could not see it too widely commented upon, criticized, supplemented, bettered, or more especially adapted for our country.

My home is 12 miles south of the center of the New York and Pennsylvania State line. With the coming season my inclination is to give this a thorough trial. I wish, on behalf of same, to be as well posted as possible. The only question in my mind now is whether to give the colonies from which frames of capped brood are taken, frames with but starters or full foundation. I notice that with "shook swarming" some advocate giving only starters.

I have naturally compared the method referred to with "sbook swarming," as yet, though, I have not practised either.

DIRECTOR J. E. CRANE.

It seems to me now a question whether the German method offers anything superior to "shook swarming." The main point about swarm prevention seems to me, is to give the bees so much to do, that, as it were, the swarming impulse is aborted. And in "shook swarming" this is done by a *depletion* of the brood-chamber.

According to the "Biggle Bee-Book," and Lyon's bee-book, on "shook swarming," it is best to let the colony to be shaken, have only narrow strips or starters of foundation. And this, to my mind, indicates the degree of depletion necessary, in this country, at least, for the purpose intended.

Now, it seems to me, that the German method does not by far involve as much depletion to most of the colonies that are not to swarm. Suppose, as stated, the German plan is undertaken in units of 10 colonies; the one which is to be dequeened and divided up into colonies is, of course, depleted. But how about the other 9? Suppose there would be 8 queen-cells started; that would afford 8 nuclei Now, as each nucleus can take only one frame of brood at a time, there would be 9 colonies to supply each (all but one one frame of capped brood; it would take probably 8 days for the same to hatch, and then another frame could be taken from each of the colonies. But would not such depletion be too slow require or extend over more time than available) to prevent swarming?

Compare the depletion in "shook swarming"—leaving to the bees at once starters of foundation *only*—with this German method, wherein only one frame of brood is to be taken away. I have 10-frame hives; this would leave each colony with 9 frames of comb, with honey, brood and bees.

Does it not look as if the German method at best, in this country—*i. e.*, considered climatically, latitudinally, and generally idiosyncrally—might prove a failure?

I wish to be enabled to size up the matter as thorougly as possible.

Ulster, Pa., Dec. 9. CHAS. REYNDERS.

It is hardly wise for one to commend or condemn any plan without first committing it to the bees to see how it may pan out. Besides, what may be very good for one bee-keeper may not always be good for another. Yet for the sake of bringing out some general principles, it may be worth while to give a close discussion to this matter.

The heading of the chapter to which particular attention is called is: "Excessive Swarming Must Be Prevented." If the only object be to prevent *excessive* swarming, then a much simpler and easier plan is the common one that has been given so many times in these columns: Set the swarm on the old stand with the old colony close beside it; a week later move the old colony to a new stand.

Your desire, however, is doubtless to use the plan to prevent swarming altogether; and so to learn about any possible danger-points.

The best colony is to be dequeened when at the highest point of development. The author thinks that would be about the end of May, and you think it would be the end of April in your latitude. You are in latitude 42 degrees, the same as the latitude here. If bees were forced to start queen-cells here in April, the queens would generally be worthless. Of course, some seasons are earlier than others, but April would always be too early, and often the first of June would be too early for *good* queens. At any rate, wait till the bees begin naturally to start queen-cells preparatory to swarming.

You are planning on one frame of brood for each nucleus, and then to give to the nuclei frames of brood without any bees. That will be likely to result in more or less chilled brood, for the nuclei will have few bees, and you will not find it easy to have no unsealed brood in the frames given. It will help matters if the brood be kept for a week or so over an excluder on a strong colony. Even so there may be danger to the sealed brood if there be too few bees to cover it.

Taking brood from the strong colonies is expected to prevent their swarming. This is very unreliable unless all but one frame of brood be taken. Sometimes taking a single frame will prevent swarming; sometimes taking half the brood will not seem to make a particle of difference. So you can place no certain dependence upon it.

I do not understand how queens in nuclei can be "tested as to their value." To test a queen as to its value is to find out about its prolificness as a layer, or the amount of honey stored by its worker progeny. You could not tell much about either of these in a nucleus.

When you take away a single frame of brood from a strong colony, the case is quite different from a shaken swarm. The latter is much like a natural swarm, and much of the comb built will be worker-comb. When only a single comb is taken, if the frames given them in return be not entirely filled with foundation, the bees will be almost certain to build a large proportion of drone-comb.

There is a very wide difference between the amount of depletion that takes place in shake-swarming, as compared with taking away one frame at a time. Take away all the brood, or all but one, and you have put the colony in much the same condition as a natural swarm, no matter whether you use starters or full sheets of foundation. When you take away only one brood the depletion is so little that it will generally have no effect in the way of prevention of swarming. In reply you may say that if one brood be taken away each week for 9 weeks, the total depletion will be just as much as if the whole 9 brood had been taken at one time. That's true, but the result will not be the same. If you should go without food or drink for 100 days, it would probably end your career as a bee-keeper. Instead of that, suppose you abstain for 200 days the half of each day, say from 6 each evening to 6 the next morning. The abstinence of half a day each day for 200 days would make a total abstinence of 100 days; but the result would be quite different from taking the abstinence all at one dose. Just the same with the swarming. Taking away one brood each week would not prevent swarming one time in 50. C. C. M.

MISCELLANEOUS NEWS ITEMS

Prof. A. J. Cook, of California, so well known to the older bee-keepers everywhere, has recently been appointed Horticultural Commissioner for the State of California, by Gov. Johnson. This is indeed a magnificent appointment, and things horticultural in California may soon be expected to go forward by leaps and bounds. And, then, with Prof. Cook's bee-keeping proclivities, we may in the near future see the horticulturists of California holding joint conventions with bee-keepers. When these two allied interests once pull together we may expect to see such an advance in both fruit-growing and honey-production as this world has not yet dreamed of. We hope that the great State of California may be the leader in such united effort.

We hardly know which deserves the more congratulation, Prof. Cook upon his appointment, or the State of California upon its good fortune in securing the services of such an experienced, loyal and worthy Horticultural Commissioner as Prof. Cook. Perhaps it is equal. At any rate, we wish Prof Cook unbounded success in his new position, and California great progress along every line of work which Prof. Cook directs.

◆

Association of Apiary Inspectors. We have received the following which will surely be of interest to inspectors of apiaries the country over:

On Dec. 30, 1911, in Washington, D. C., there was formed a temporary organization of the Association of Apiary Inspectors of the United States and Canada, with a view to increasing the efficiency of apiary inspection, to bring about a greater uniformity in the laws, and more active co-operation between the various inspectors.

A committee on permanent organization was formed to report at a meeting to be held in Cleveland, Ohio, in December, 1912, in connection with the meeting of the Association of Economic Entomologists. Prof. Wilmon Newell, of College Station, Tex., is chairman of this committee.

A standing committee was also appointed on Legislation, for the purpose of drawing up a law incorporating the necessary and desirable features. The undersigned was appointed chairman of this committee.

All apiary inspectors and official entomologists of the United States and Canada, who are interested in the advancement of apiculture, are invited and urged to join in this movement for an increased efficiency in the fight against the brood-diseases. For the present it was decided to levy an assessment, $1.00 per year, on each member, to pay necessary expenses. It is hoped that arrangement may later be perfected for affiliation with the Association of Economic Entomologists. Requests for membership and the assessment may be sent to the undersigned.

Respectfuily,
E. F. PHILLIPS,
Bureau of Entomology, Washington, D. C.
Secretary.

DR. BURTON N. GATES,
Amherst, Mass., *Chairman.*

We hope that every inspector of apiaries in the United States and Canada will unite with the new organization. Its efforts can but result in good to the whole bee-keeping industry. Let every inspector send at once his annual dues of $1.00 to Secretary Phillips, and get in line for more advanced and efficient apiary inspection.

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Growing Sweet Clover.—We have no doubt that if more bee-keepers knew how to grow sweet clover they would be sowing acres and acres of the seed. A very good way to learn is to read how other people have succeded. In a recent issue of Gleanings in Bee Culture we find the following from two successful growers of sweet clover one in Iowa, and the other in New York:

An Iowa Experience.

Plan No. 1.—Sweet clover must be sown on land well supplied with humus or lime, or both, as it will not grow well on ground badly worn, nor in soil that is strongly acid or sour. In order to start sweet clover on such land, plow the ground to a fair depth; pulverize, and top-dress heavily with manure. Then sow the seed and harrow in the manure and seed together. A light application of lime would be of great benefit; but a good catch can be secured without the lime.

Plan No 2.—Another way to secure a stand is to plow a field that has been seeded for at least two seasons to timothy, clover, or both. While it is better to plow in the fall, the spring will do. Before seeding work the ground just as you would for corn; sow the seed, and cover, using a common harrow, and your success will be sure. Many have old hog-pastures that are overgrown with bluegrass. Those fields, when broken up, make very excellent ground for sweet clover. Sow one-half of such fields to sweet clover, and note what nice, green, succulent feed the pigs will have all summer long, when the bluegrass is dead and of no use to pigs.

Plan No. 3.—Any field that has grown 50 or 60 bushels of corn an acre can be sown to Early Champion oats, barley or wheat, and still make possible a stand of clover. Sow 1½ bushels of oats, and ¼ less of either barley or wheat, taking care that the ground is fairly smooth. This nurse crop will work well, provided there is not a severe drouth to spoil the clover. This seldom happens in the corn belt. The clover should be well up in the grain at harvest time. If the grain is cut high from the ground it will be better for the clover. Often a fine cutting of hay will be secured later in the fall, about Oct. 1st, or a fine pasture for stock. There is much to recommend this plan.

Comments.—The seed can be sown any time between early spring and the last week of July; but it makes such a strong growth the first summer, seeding should be done when convenient in April or May, using 20 pounds of hulled seed per acre. The seed should be hulled. If unhulled seed is sown, about one-third of it fails to germinate the first season, and doesn't come up until another year. Then, again, the unhulled seed often results in uneven growth, too thin in some parts of the field and fair in others. The sower should bear in mine that proper elements of the soil are necessary at first, because of the lack of sweet clover bacteria in the fields. Just the right conditions are required to start the nodules on the sweet-clover roots, which, in time, burst and multiply and fill the soil.

Do not make the mistake of trying to grow two or three crops of corn and then sow to sweet clover, as the land has not yet a supply of the bacteria required to grow it. After it has been growing on the land for a few years, and the bacteria are started, you will notice how much better it thrives. Many hundreds, and perhaps thousands, of bushels of this seed have been thrown away because it was not sown on the right kind of ground. The bluff deposits of the Missouri River basin seem to grow sweet clover at once under any conditions, and in all of the States it appears to have much less trouble in getting a stand. Sweet clover succeeds on lands so filled with alkali that nothing else grows well.—Frank Coverdale, of Clinton Co., Iowa.

A New York Experience.

I have never tried to raise a lot of sweet clover, but have always had several small patches around our premises. It has come up almost as quickly and as surely as radish seed, whether I have sown it in the spring, summer, or fall. About Aug. 15 we gathered some seed (stripped it off by hand), some being black and some green. I sowed this where I had had a small patch of early potatoes, first going over the ground several times with a hand cultivator. In a little over a week the ground was all evenly covered with young plants. I doubt whether they will winter; but as the seed was put on fairly thick, I think there will be enough that did not come up to make a stand in the spring. The seed was unhulled, of course, and the white variety. My experience, although on a small scale, is that it has never been praised too highly as a fertilizer of the soil.

About six years ago one of our neighbors gave us a small handful of sweet-clover seed for our flower garden—perhaps a tablespoonful. I sowed it in a shallow trench and covered it with about half an inch of soil. It came up all right and made a rank growth. The next spring, after it bloomed, I dug out the dead roots, spaded it well, and planted a row of sweet peas in the same spot.

We have always had very pretty sweet peas; but these were a marvel—great sturdy stalks, large dark-green leaves, and the bloom was wonderful—the finest sweet peas I ever saw. I puzzled my head trying to find out what I had done to those peas to get such fine plants; then after a while I "tumbled." It was the sweet clover of the year before.—Geo. Shiber, of Cattaraugus Co., N. Y.

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Our Government and Bee-Keeping.—On page 8 we referred to some good work done by the Legislative Committee of the National Bee-Keepers' Association. As a partial result the Secretary of Agriculture has sent out the following to the various publications:

Foul Brood.

The census of 1910 shows a decrease of almost 800,000 colonies of bees on the farms of the United States. There is also a considerable decrease in the number of farms reporting bees. Since bee-keeping is one of the important and profitable minor branches of agriculture, this decrease among farmer bee-keepers is unfortunate. No returns are available for bee-keepers in towns and cities.

Bee-keeping is fast becoming the business of the specialist, and the number of men who devote their entire attention to the business is rapidly increasing. However, there is no reason why the average farmer can not keep a few colonies of bees to supply honey for home consumption with perhaps some surplus for sale in good years.

The United States Department of Agriculture attributes most of the reported decrease to the brood-diseases of bees, which are now found widely distributed in the United States. The Department has knowledge of these diseases in about 20 percent of all the counties in the United States. Where disease exists bee-keepers often lose colonies, and attribute their loss to some other cause. Because of these facts, the Department advises persons interested in bees to inform themselves concerning these diseases. It is quite possible to keep bees with profit with disease prevalent in the neighborhood, provided the bee-keeper knows how to treat the disease. Farmers' Bulletin No. 442, "The Treatment of Bee-Diseases," will be sent free on request to the Secretary of Agriculture, Washington, D. C.

We hope that the foregoing announcement will be widely published, for it can only result in benefit to bee-culture. If any of our readers have not had a copy of Farmers' Bulletin No. 442, we hope they will send for it at once. It can be had for simply the asking.

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Grafting-Wax.—As there are doubtless many among our readers who have occasion to use grafting-wax, we take the following from that unusually good farm weekly, the Rural New-Yorker:

Will you give me a recipe for making grafting-wax? What I bought, when the hot weather came, ran off, leaving the graft open, letting the air in. J. S. M.

A standard grafting-wax calls for rosin, 4 parts by weight; beeswax, 2 parts by weight, tallow, rendered, one part by weight. Melt all carefully together, but do not let it boil. Pour the hot liquid quickly in a pail of cold water, and with greased hands flatten the wax under the water so that it will cool evenly. Let it get cold and tough, but not brittle; then remove from the water and pull like taffy until it is alike ductile and fine in grain. If lumpy remelt and pull again. Make into balls or small skeins and put away in a cool place. When wanted soften with heat of hand or in hot water.

This is an excellent wax for all purposes; it may be made softer by using a little more tallow, or tougher by a rather larger proportion of beeswax.

The Banat Bees.—As we have had several enquiries about the Banat bees, we have requested Mr. Grant Anderson, of Texas, who is familiar with them, to tell of their important points:

For the benefit of those who have never had the pleasure of handling or seeing the Banat bees, I will give a description of them in the columns of the "old reliable" American Bee Journal.

The Banat bees are natives of Hungary, and are neighbors to the famous Carniolan bees, which you know come from Carniola, Austria.

The Banat bees are classed by some men as cousins to the Carniolan bees, which they very much resemble.

In color the Banat bees are a dark gray, somewhat darker than the Carniolan, and have no trace of yellow on them; while the Carniolan may show some copper bands and yet be pure.

In size the Banat bees are a trifle smaller than the Italians, and a little more pointed at the tail.

Their actions are the same as the Carniolans, being very quiet and gentle under manipulation, and go on with their work while you handle the combs.

The queens are very gentle, and good, prolific layers.

In color the queens range from an orange to a jet black, and it is a common thing to see light and dark queens hatch from cells grafted with the larvæ of one queen.

The yellow queens produce workers a shade lighter than do the dark queens, and it is reasonable to believe that a golden bee can be produced by careful selection in breeding for color.

The Banats are white cappers, and good honey-gatherers. They are not bad swarmers, and gather but little propolis. They defend their hives well.

As breeders the Banats are about the same as the Italians, and let up on their breeding when the honey-flow lets up.

The Banats are good all-purpose bees.

Grant Anderson.

◆

"First Lessons in Bee-Keeping."—In the course of a short review of this book the British Bee Journal says:

The present edition has been revised by Mr. C. P. Dadant, one of the most successful honey-producers and the reviser of the last edition of Langstroth's book, so this is a guarantee that the work is well done. The book before us is principally intended for beginners; it contains the foundation principles of bee-keeping, and is not meant to take the place of the larger works on the subject. Progress in bee-keeping has been so great during the last 30 years that we are not surprised to find that much which appeared in the earlier editions has had to be left out, new matter taking its place.

◆

Iowa Bee-Keepers' Association.—December 29, 1911, the Tri-State Bee-Keepers' Association met in Sioux City and at this meeting the Iowa delegation organized the Iowa State Bee-Keepers' Association, with W. P. Southworth, of Salix, Iowa, as president; C. L. Penny, of Le Mars, Iowa, secretary and treasurer. Three vice-presidents were chosen to boost the organization in their districts—Frank C. Pellett, of Atlantic; Frank Coverdale, of Delmar; and J. L. Strong, of Clarinda.

As a committee on program for the next meeting, the following were named: C. L. Penny, J. B. Espy, R. A. Morgan.

Iowa needs the Association, and its organizers expect the enthusiastic co-operation of every bee-keeper in the State, and each one is urged to send in his name and membership dues at once to the secretary, C. L. Penny, of Le Mars, Iowa.

To be in harmony with the new Constitution of the National Bee-Keepers' Association, the membership dues were fixed at $1.50 per year. Some may say that their dues are paid up in the National, and, therefore, they will delay sending their dues to the State Association; please do not do this, but send in your dues at once, and your membership in the National will be extended.

The new Association needs funds with which to begin work at once. The first business will be to arrange for a big convention to be held at a time that will be most convenient for the largest number of bee-keepers, when the organization will be perfected and immediate steps taken to secure legislation to assist in checking the spread of bee-diseases in the State.

No State in the Union can produce better honey than Iowa, and by mutual assistance the bee-keepers can greatly increase their yields, and improve market conditions.

Let every one interested in bee-culture join the big cluster at once by sending in his name and any suggestion that he has to offer. Reporter.

The Northern Michigan Bee-Keepers' Association will hold its next annual meeting at Traverse City, Mich., March 13 and 14, 1912. Whiting Hotel will be the headquarters. Special rates have been arranged for, and also the Hotel's parlor on the second floor has been offered to us for the meetings. A good program will be provided, and we would like to see many new faces. If you are so you can come, better do so. We are sure you will have a pleasant time. Ira D. Bartlett, *Sec.*

East Jordan, Mich.

Ventura Co., Bee-Keepers' Club.—At a meeting of the Ventura County Bee-Keepers' Club, held at Fillmore, Calif., Jan. 6, 1912, it was unanimously voted to join in a body the California State Bee-Keepers' Association.

Inspector Allen was upheld in the matter of quarantining all queens and bees from outside of the county on account of bee-diseases. All queens and bees shipped into Ventura county must bear an inspector's certificate, or they will be destroyed when they arrive.

E. F. McDonald, *Sec.*

Santa Paula, Calif.

Northern California Convention.—The Northern California Bee-Keepers' Association held its 6th annual meeting at Sacramento, Calif., on Wednesday and Thursday, Dec. 27 and 28, 1911. The sessions were fairly well attended, and had a good representation from all parts of the State, the north and central parts especially.

The topic, "The Value of Organization," was thoroughly discussed, and a committee was appointed to meet with a committee from the California State Bee-Keepers' Association from Los Angeles, and see if it could not be arranged to have one State organization.

Both organizations were requested to make some alterations in their constitutions, and report at the next meeting for final hearing.

A State Inspector was agreed upon, and the necessary steps taken to have such an office created; and all societies were urged to co-operate and prepare a bill to present to the Legislature some time this session.

Prof. A. J. Cook was present, and gave an hour's talk, and one and all desired that he go on longer, as his discourse was very interesting, and the only regret was that there were not more present to enjoy the important facts that he brought out.

C. Hauser was elected president, L. D. Walker, vice-president; Win Gear, of Vorden, secretary and treasurer; and Mrs. L. D. Walker and Harry Hill directors.

The meeting proved a benefit to all present, and the other counties in the State were urged to organize similar associations, then to have inspectors appointed, and all to agree upon the State Inspectors' Bill.

J. C. Frohliger.

Berkeley, Calif., Dec. 20.

The National Association.—Finally we have something of great interest to present to our readers concerning the proposed work of the National Bee-Keepers' Association under its new Constitution, adopted last November, and as interpreted by the Board of Directors elected at the same time.

As announced in last month's American Bee Journal, the Board met, and the following is a condensed report of the work they expect to undertake for the members of the National Association during 1912, as reported by Secretary Tyrrell, who was also elected as secretary of the Board for the Detroit meeting:

What the National Bee-Keepers' Association Will Do this Year

The meeting of the Board of Directors held in Detroit, Mich., Jan. 23, 1912, was probably the most important of any Board meeting held in the history of the Association. Plans of re-organization had to be considered, as well as just what the Association would and should do for its members.

Honey-Crop Reports.

One of the most important needs of the bee-keepers, as it appeared to the Directors, was an accurate knowledge of crop conditions. To get this, it was decided to send out crop reports early in the season to every member, and from the information so obtained, advise the members, either direct or through the bee-papers, as to the conditions.

Packages for Honey.

The Board also found that the question of honey-packages was an important one. At the present time there is not near the uniformity there should be. No special weight of tin or size of can has been adopted in the past, and many shippers were using a tin entirely too light. Samples of honey-cans were inspected by the Board, with the decision that the Secretary be instructed to make the best possible arrangements for furnishing the members with the tin honey-packages the coming season. The orders will be handled directly through the Association office, and will not be sent by the member to the can manufacturers as in the past.

In discussing the question of packages for comb honey, and realizing that there are a number of different kinds and shapes in the market, it was thought best that in order to promote uniformity of a comb-honey package the Association should take steps to secure for its members, at the lowest possible prices, the double-tier 24-pound shipping-case, which was adopted by the Association at its last convention.

These cases could be furnished according to specifications so that every member buying through the National would be using exactly the same case as every other member. In order to induce a more general adoption, it was thought advisable to furnish them at a low price.

The Secretary was also instructed to investigate paper shipping-cases, as well as glass packages. This action was not taken with an idea of getting into the bee-supply business, but to promote the using of uniform packages by the members, which, then, will simplify the question of marketing, and eventually raise the price the bee-keepers can obtain for their honey.

Marketing Honey.

The question of marketing honey was thoroughly considered, and many plans presented. The one finally decided upon was that for the coming season the National Association should act in the capacity of a broker for its members where desired. It is not expected or desired that all members will ship their honey through the Association, but realizing that many are not in touch with the best markets, it was thought that no better move could be made than to assist these members in obtaining the proper returns for their honey crop. To do this, selling agencies will be established in several of the larger cities, and the sales will be directed through the Association. A member having honey to sell could first get instructions from the Secretary, who is expected to keep in close touch with market conditions, take into consideration the freight-rates, and then give the member full instructions as to shipment. The Association does not intend to buy and sell honey, but simply to assist the producers in finding the best possible market.

Organizing Local Branches.

The promotion of local branches will be encouraged, and wherever a local branch desires to get out a booklet, such as has been used by the Michigan Association, assistance will be given by the National Association. This feature will be encouraged. The advertising of this booklet will be cared for by the National, but will probably be confined to the four bee-papers on the start. E. B. Tyrrell, *Sec.*

230 Woodland Ave., Detroit, Mich.

We hope that every member of the Association who has not as yet paid his dues for 1912, either direct or through his local organization or branch, will do so at once.

Perhaps it will be well for us to give

here a copy of the new Constitution, as adopted in November, 1911, and which went into effect Jan. 1, 1912:

Constitution of the National Bee-Keepers' Association

ARTICLE I.—Name.

This organization shall be known as the National Bee-Keepers' Association.

ARTICLE II.—Object.

The object of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax, and to promote the interest of bee-keepers in any other direction decided upon by the Board of Directors.

ARTICLE III.—Plan of Organization.

This organization shall consist of one central organization with its various branches. These branches may be in any locality where 25 or more members of the National Association decide to form a branch.

ARTICLE IV.—Membership.

Section 1.—Membership shall be extended to any person interested in bee-keeping, and who is in accord with the purposes and aims of this Association. The annual membership shall be $1.50; one-third, or 50 cents, of which shall go into the fund of the local treasury where such a branch is maintained.

Sec. 2.—Whenever a local bee-keepers' association shall decide to unite with this Association, it will be received upon the payment by the local secretary of one dollar ($1.00) per member per annum to the Secretary; but *all* active members of such local association must become members in order to take advantage of this provision.

Sec 3.—Membership in the National Association will begin Jan. 1st each year. Those joining *previous* to Sept. 1st will be credited paid to Jan. 1st following. Those uniting after Sept. 1st will be credited paid to one year from Jan. 1st following.

ARTICLE V.—National Meeting.

Section I.—The National meeting shall consist of delegates duly elected by the various branches. These meetings shall occur during the month of February, the exact date and place to be decided by the Board of Directors.

Sec. 2.—Each branch shall be entitled to elect one delegate to attend the National meeting, who shall present proper credentials, and, if correct, such delegate shall be entitled to one vote for every 50 members or fraction thereof in his local branch.

Sec. 3.—At the annual meeting the delegates may hold one or more sessions open to bee-keepers for the consideration of such special or general topics as the Board of Directors may decide upon.

ARTICLE VI.—Officers and Duties.

Section 1.—The officers of this Association shall be a President, Vice-President, Secretary, and Treasurer-General Manager. These officers shall be elected at each annual meeting of delegates and serve one year, or until their successors are elected and qualified.

Sec. 2. The President shall preside at each annual meeting of delegates, and at any special meetings which may be called. He shall also preside at all meetings of Directors, and perform any other duties which may devolve upon the presiding officer.

Sec. 3.—The Vice-President shall perform the President's duties in his absence.

Sec. 4.—The Secretary shall keep a record of the proceedings of the annual meeting; maintain a list of all members of the Association, with their addresses; collect, receipt and pay over to the Treasurer-General Manager all dues and membership fees; keep a proper record of all business transactions, and perform such other duties as may be required of him by the Association or Directors.

Sec. 5.—The Treasurer-General Manager shall care for the funds of the Association, depositing the same in such depository as may be approved by the Directors. He shall also pay such orders coming to him as may bear the signature of the one authorized by the Directors to draw orders.

ARTICLE VII.—Board of Directors and Their Duties.

Section 1.—At each annual meeting of delegates, in addition to the officers named in Article VI., there shall be elected a Board of five Directors. (For the year 1912, the officers and Board of Directors shall be elected at the regular ballot election of the Association, to serve until their successors are elected by a meeting of delegates.)

Sec. 2.—These Directors shall care for the business of the Association between the annual meetings. They shall have full supervision of the work of the officers elected, and shall have power to remove from office any officer or director not acting in accordance with the Constitution and By-Laws of the Association.

Sec. 3.—The Board of Directors shall decide upon the compensation of the various officers, authorizing the amounts so decided upon to be paid from the general treasury.

Sec. 4.—The Board of Directors shall have power to elect a General Organizer whose duty it shall be to promote the organization of branches throughout the United States and Canada. They shall also decide as to his compensation.

ARTICLE VIII.—Organization of Branches.

Section 1.—Local branches may be established in any locality, but not interfering with a branch already established, whenever the membership in that locality so desires.

Sec. 2.—A local branch shall consist of not less than 25 members.

Sec. 3.—A local bee-keepers' association already established may become a branch by a majority vote of its members, either by mail or at a meeting, and accepting the Constitution and By-Laws of this Association.

ARTICLE IX.—Amendments.

Section 1.—This Constitution may be amended at any regular meeting of delegates by a two-thirds vote of the delegates present and voting, provided that at least 90 days' notice of the proposed amendment be given to the secretaries of the branches.

ARTICLE X.—Rules of Order.

Robert's Rules of Order shall govern all meetings of both the National and branch organizations.

"Advanced Bee-Culture."—A new edition of this book, by the late W. Z. Hutchinson, of Michigan, is one of the practical and up-to-date books for the specialist bee-keeper ever written. Its 200 pages touch on nearly 500 subjects pertinent to modern bee-keeping, and all are discussed authoritatively. It has many fine illustrations. It is bound in attractive and substantial cloth, with a clover design in natural colors on its cover. All together it is a volume whose appearance and unquestionable worth justly entitles it to a place in the library of every bee-keeper. No more important work on the subject has appeared. It is mailed for only $1.00, or with the American Bee Journal one year—both for $1.80. Send all orders to the office of the American Bee Journal, 117 North Jefferson Street, Chicago, Ill.

* * *

"Bee-Keeping by 20th Century Methods; or J. E. Hand's Method of Controlling Swarms," is the title of a new booklet just issued from the press of Gleanings in Bee Culture. While it is written particularly to describe Mr. Hand's methods of controlling swarms by means of his new patented bottom-board, the booklet contains a great deal of other valuable matter, among which is the following: The hive to adopt; re-queening; American foul brood; wintering bees; out-apiaries; feeding and feeders; section honey; pure comb honey; conveniences in the apiary; producing a fancy article of extracted honey; swarm prevention by re-queening; increasing colonies, etc. The price of this booklet is 50 cents postpaid, but we club it with the American Bee Journal for a year—both for $1.30. Address all orders to the American Bee Journal, 117 North Jefferson St., Chicago, Ill.

* * *

"The A B C of Potato Culture" is the name of a book of nearly 400 pages, with 40 illustrations, and devoted entirely to the growing of potatoes. It is written by T. B. Terry and A. I. Root, and tells how to grow successfully one of the greatest money-making crops. In fact, a careful study of this potato-book will help you in growing almost *any kind* of farm crop. Every farmer, whether large or small, ought to have a copy of it. The postpaid price of this book, bound in paper, is 57 cents; bound in cloth, 85 cents. We club the paper-bound edition with the American Bee Journal for one year—both for $1.40; or the cloth-bound book with the American Bee Journal one year—both for $1.60. Address all orders to the office of the American Bee Journal.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Bees Wouldn't Sting Her

If it be desired to learn how many errors a newspaper reporter can pack into a given space, just start him to writing about bees. He will range all the way from things that are everyday affairs to a bee-keeper, but given as wonders, up to things that are beyond belief. The following newspaper clipping about Miss Susan Howard (who is probably *Mrs.* Susan F. Howard) is a fair sample:

> BOSTON.—More than 100 pounds of honey were removed from among the hives of swarms of wide-awake bees without disturbing them or inciting them to sting, by Miss Susan Howard, of Greenwood, at the apiary of Harry Munroe, in South Lynnfield. Miss Howard, who is recognized as Wakefield's leading bee-expert, was summoned only after Munroe and dozens of other South Lynnfield youths were driven away by the bees after attempts to get the honey.
>
> When the Wakefield woman approached the hives, and with her deft hands loosened the combs, the bees looked at her motionless, as if under a spell. Bees that were on the combs flew out of the way with as much obedience as a naughty school-boy leaving the room at his teacher's command. Miss Howard claimed she hoodwinked the bees by psychology. That is, she attracted their attention to rings on her fingers. They were so fascinated by the rings that they did not seem to mind the loss of the honey.
>
> Miss Howard holds office in the National Association of Bee-Keepers. She is 45 years old, has an independent fortune, and devotes practically her entire time to bee-study.

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Honey In Europe—Honey-Bread

We are indebted to S. R. Stewart for the following clipping from the Christian Herald, which is certainly doing a Christian work in commending so good a thing to its large circle of readers:

> In Europe, where the food value of honey seems to be much better understood than in the United States, enormous quantities are used. Of late years we seem to be waking to a realization of the value of honey as a wholesome and delicious article of food, and also as to its preservative qualities. Cakes and sweet-breads made with sugar soon become dry and crumbly, and to get the good of them must be eaten when fresh; but where they are made up with honey, they seem to retain their moist freshness indefinitely. In France, honey-bread a year or 18 months old is preferred to that just made. They say: "It has ripened." It is the preservative, or rather the unchanging, quality of honey that makes it so popular with the best confectioners.

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Mrs. Naria Lundgren—A Swedish Sister Bee-Keeper

A woman bee-keeper in the fullest sense of the words, is the one whose likeness is given herewith. Mrs. Lundgren, who is 32 years old (together with her husband, considering the Swedish conditions), has conducted a pretty fair bee-yard in the vicinity of Stockholm, Sweden. Her idea in the care of bees has always been to have a few colonies, but to give them good care. During her husband's sickness in 1906, together with the house-keeping, she had the whole charge of the bee-yard with queen-rearing, and superintended a smaller bee-supply shop with about a dozen employees.

Mrs. Lundgren is well known among the bee-keepers in Sweden, and when her husband is out on his business tours in the country, this question is always asked. "Well, where is Mrs. Lundgren?"

The home bee-yard during the summer months is visited by hundreds of beginners in the business, and almost always she is the one from whom they get their first knowledge of the care of bees. It is not only at home where she helps the ignorant, but she tours with her husband and lectures at the professional meetings of bee-keepers. Often she contributes an article to her husband's bee-paper, "Bigarden," of which paper she often has the whole responsibility.

By the older bee-keepers Mrs. Lundgren is called "The Queen." Nevertheless, working as she does for this profession in the Far North, she does not neglect her children and her home, where she is as "busy as a bee." Not of a "stinging" nature, she gains everybody's confidence by her gentle and attractive ways. BEE-KEEPER.

MRS. MARIA LUNDGREN.

We are proud to know of this bee-keeping sister in far-away Sweden. The probability is that she is the only woman in the world on whose shoulders at times falls the entire responsibility of a bee-paper. More the pity that the paper is published in an unknown tongue.

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Value of Honey in Baking, Etc.

Many people who do not keep bees, and a few that do, consider honey a luxury, when, if freely used, it will save enough of either butter or sugar to much more than equal its cost. For example: Have a pitcher of extracted honey at hand, and as each cake is taken from the griddle, pour honey over it and fold like an omelet. The result will be cakes that will be "simply delicious" without the use of butter—and every housewife knows that hot-cakes call for a great deal of butter, when that is used.

Honey has greater sweetening power than sugar, and is less needed. In a sponge-cake that would call for a cupful of sugar, ¾ of a cupful of honey is sufficient. To make such a cake, beat ¾ of a cupful of honey with the yolks of 3 eggs; beat in one cupful of flour, a little at a time, then add 4 tablespoonfuls of hot water, and lastly fold in the stiffly beaten whites of the 3 eggs, with any flavoring desired.

In general use of cake or cooky recipes, it is safe to allow 8 tablespoonfuls of honey and 2 tablespoonfuls of sugar to each cup of flour called for in the recipe.

One of the most delicious of cake fillings is made by cooking half a cupful of honey and an equal amount of sugar with 2 tablespoonfuls of water until it "threads," and then beating it into the stiffly beaten white of one egg. Continue the beating until the mixture is cool, and like heavy cream. This makes a fine filling for sweet sandwiches, as well as for layer cakes.

To make a fine preserve, peel and quarter tart apples, and to each pound of prepared apple add a pound of honey and a few pieces of ginger-root. Arrange in layers in a jar and let stand 72 hours. After that, simmer very slowly until the apples are transparent and the syrup thick. If the apples reach the transparent stage before the syrup is thick enough, take them out and cook the syrup until of the proper consistency, and of a bright, rich golden color. Pears, quinces, and other solid fruits may be prepared in the same way, and are superior to those preserved with sugar.

Honey may be substituted for sugar in preparing pickles, and the change will be an improvement. In fact, honey-vinegar is the purest and has the best keeping qualities of any vinegar made.

The foregoing, by Eva Ryman-Gaillard, is taken from Suburban Life. It is a fine thing to have such matter placed before the readers of a popular publication, but a caution is needed lest too much be claimed for honey. Honey is more wholesome than sugar, especially if sugar be used in large quantity. Cake, cookies, etc., will keep very much longer when honey is used in them than when sugar is used. Either one of these qualities is enough to give honey a great preference. In perhaps most families it would be real economy to use honey instead of sugar in baking cake, even if honey should cost twice as much as sugar, and even if honey should be considered no more wholesome than sugar. This would not be true if all cakes were eaten as fast as made. But this is not the case. Cake in which sugar is used is at its best when first made, and cake which is stale is likely to stand around until it is thrown away. This, even in families that are fond of cake and see no objection to eating it. There are, however, many families which do not consider cake a very wholesome article of food, and the number of such families is constantly increasing. But they can not get away from the idea that cake should be constantly on hand "in case company comes." And to put stale cake before company—perish the thought! So cake must constantly be made in order to be constantly fresh, and then as constantly—thrown away. In such families it might be economy to pay four prices for honey.

So it is not necessary, nor is it wise, to claim that "honey has greater sweetening power than sugar, and less is needed." Honey may seem to the taste sweeter than sugar, perhaps because one more promptly gets the sweet taste from honey than from sugar, but it is pretty certainly an error to think that a pound of honey contains more sweetening power than a pound of sugar. It has been said that a pound of sugar will go as far as a pound and a half of honey, and some have made the difference greater. It would be of interest if some sister who has positive knowledge upon the point would tell us just what is the sweetening power of honey as compared with sugar. Indeed, such knowledge would not be despised if it should come—in a proper spirit of respect—from one of the brethren.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga

Apiarian Opportunities

As I go to and fro over the country I look out through the car windows with eager eyes and view it from a standpoint of an energetic bee-keeper. Then I drop my eyes, and from my enterprising spirit comes, "Oh! the opportunities for our industry!" Thousands of hustling men could be in the field of apiculture, not only making honest livings, and increasing their business, but money besides.

Truly, the golden opportunities of our lovable industry are shining brighter than ever before, and it is up to us to embrace them.

Viewing the situation of our industry at present, I can only say that we have made progress, but with the great opportunities that are within our reach, I am proud of the future of bee-keeping.

Making and Keeping Good Resolutions

It is rather late for New Year's resolutions, but as the bee-keepers' busy season is near they may be more appropriate. I wish to state a resolution, or whatever you may call it, which the writer made once.

When I was about 14 years old I attended a country-cottage prayer-meeting, and the leader read the 6th chapter of St. Matthew, in which these words of the Savior are recorded, in the 33d verse: "But seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you." Of couse, from the previous verses I knew he meant temporal things.

After reading the chapter we knelt in prayer, and with these words fixed in my memory, I prayed about thus, secretly:

> "Lord, I have loved you ever since I can remember, and I am a poor orphan boy, and I need clothes, money, education, and everything this world can give me, and in this verse you have promised it all to me. And, Lord, if you are going to fulfill this promise in my case, you had better go about it at once, for I am right now seeking your kingdom and righteousness, and it shall be my last effort on my dying bed."

Well, that resolution has been kept, and will be kept, and has been the foremost thing in my life.

But, what about the Lord's part of it? About 20 of us country boys left home about the same time, and went into a wicked city to live. All of us were about 21 years old. But the rest of the boys had a common school education, such as they could obtain out in the country in those days, but I had none, not even enough to write my name; and, too, the rest of the boys had far more sense than I had, and I well knew it, but somehow they had too much sense, or not enough of the right kind to form or make a resolution and stick to it. Oh, the multiplied millions of young men today that are lacking in this kind of sense!

Well, ere long there was a way made for me to start to school, and I went 4 years in succession, and at the end I was ready for a business or vocation. My continued prayer was, "Lord, don't let my life be a failure." And I started out with willing hands to work, and have been advancing every since. God be praised for what I have done, whether it be little or much.

The most of the other boys went into wickness, lived unclean lives, and are in their graves; and those living are my juniors in business life. All because they did not anchor their lives in some precious promise of the Lord's, or resolve and stick to it.

The Lord has fulfilled his promise in my case.

Wilder's Comb Foundation Fastener for Shallow and Deep Frames

The cut herewith shows the foundation fastener which I use for fastening comb foundation in frames in chunk-honey production. The cut shows the device so plainly that it needs no explanation.

When I first began chunk-honey production in a wholesale way, I used only starters in the shallow frames, but by experimenting I learned that full sheets of comb foundation were far better in these frames when they could be fastened securely, but this was a difficult task, much of the foundation falling out in handling and hauling the supers out, and the bees would break it down by clustering on it heavily; and on account of this no end of dissatisfaction arose even when we used the greatest precaution, fastening it by the melted-wax plan. So I almost abandoned the use of full sheets in the frames, and used mostly starters; but this was not satisfactory, but the best I could do.

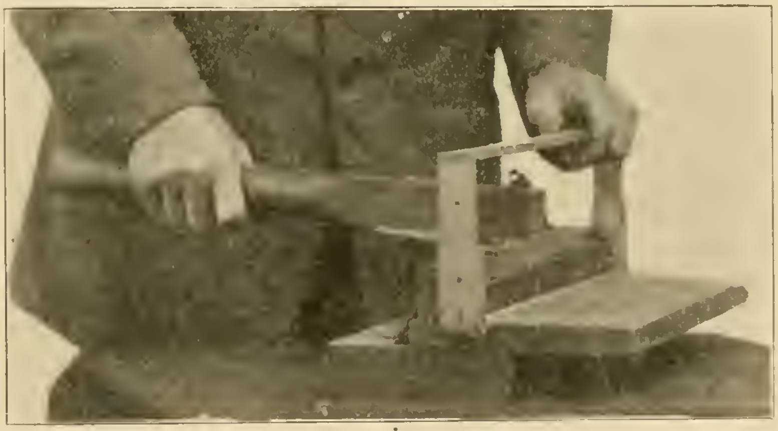
While thinking over this difficult problem one night until nearly day, this device came into my mind like a flash, and the next morning by sun-up I had a rude model made, and was fastening in full sheets of foundation. I soon found that it was a success, and solved this difficult problem, so it has been my only device for this purpose for two seasons, and I have used only full sheets of foundation since.

Our chunk-honey supers are fixed up ready for the bees, at the home apiary, and hauled out on wagons over rough roads, many of them for 30 miles, and are removed from the wagon and placed on the hives, and we rarely ever have any trouble from foundation breaking down.

I wish to mention just two things necessary in operating it in order to give perfect satisfaction: When the point of the lever touches the foundation it mashes it to the bar, and as it passes off the foundation it gives it a smearing mash, and of course the foundation must be warm enough to smear and not break. Then with new frames a piece of firm beeswax must be rubbed heavily over the part of the bar that is to receive the foundation. This fills the pores of the wood and leaves a well-waxed surface, and when the foundation is properly applied with the machine, it adheres firmly to the top-bar. It is not necessary to use any wax on old frames, or frames that have been used once.

The machine is fastened down on a table or work-bench by means of two screws, and it is strong and durable, and you can use as much muscle power on it as you wish, but it is not necessary. It works easily and rapidly.

This is the only device I have ever invented, and give it to the bee-keeping world.



WILDER'S COMB FOUNDATION FASTENER FOR SHALLOW AND DEEP FRAMES.

Since the invention many bee-keepers have tried the machine, and it has been well tested and has given perfect satisfaction.

Granulated Comb Honey

Many of the Dixie bee-keepers seem to have been behind the past season in removing, packing and shipping their fall crop of honey, and much of it granulated. One bee-keeper writes that he has quite a lot of it in this condition, and wants to know what to do with it.

There are a lot of consumers who prefer it in its granulated form. They have been educated to eat it, and to heat it up if they preferred it in the liquid form, and we bee-keepers should do more towards educating our customers on this point. A label stating why some honey would granulate, and what to do with it in case it should granulate before it was consumed, should be put on every jar, can or pail. This would go far towards relieving the situation.

The majority of the bee-keepers know the sources of honey that are liable to granulate early, and when the bees store it, and they should take it off, pack it, and put it on the market as fast as the bees finish it. But when a bee-keeper is caught late with a lot of it on his hands, already granulated solid, better keep it over until next summer and work it over, and put it on the market while the weather is warm, and it will not granulate so early, or before it could be consumed, which would surely be the case if it was worked over now. What I mean by "working it over," is to heat it up thoroughly, and if it is chunk honey, remove the comb after it is heated, and sell it as extracted honey, unless it can be heated sufficiently so as not to melt the comb. This can't always be done, or at least it is my experience.

Then another bee-keeper writes wanting to know if he can feed back his granulated honey in early spring. It might be done if the bees were very short of stores, to stay immediate starvation; but it could best be fed back to them later, just before the honey-flow, when the weather was more settled, and it would not be so apt to give them dysentery, and cause dwindling. The granulated honey or cane syrup is bad to bring about this disease, and it is best to keep it away from the bees.

If it was heated up and thinned some by adding water, and fed back later, when it would not be so likely to disease the bees, they might store too much of it in the brood-chamber and crowd the queen, and thereby do a lot of harm.

faction in every case because it was not the same as they (the consumers) got before.

Whether your honey is strong or mild flavored, try to keep your trade supplied with the same grade from one year's end to the other, and always.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

The Quality of Alfalfa Honey

Mr. A. C. Miller, in the December American Bee Journal, says:

> "For several years past, white honeys have been steadily declining in popularity in some markets, and amber or golden honey has come into popular favor. Just what the reason is it may be hard to determine, but I believe that one very potent cause has been the advent of alfalfa honey. It lacks character; it is insipid, and consumers are quick to drop it. A common remark is, that 'it is sugar-fed honey,' and I have heard that from many a person who has never seen a bee magazine or text-book. At any rate, the honey is not what they want. The amber honeys have been found on trial to have a 'real honey taste,' the golden color looks attractive on the plate, and it is becoming popular."

Mr. Miller's castigations of alfalfa honey are the outcome of an observation of conditions in a market where the stronger-flavored honeys have long held sway. The taste of the people who speak so about alfalfa honey has been brought up on strong honeys. No one who is accustomed to alfalfa honey would ever call it tasteless. It is denominated as a beautiful, mild-flavored honey. We see a good many Easterners out here—in fact, the bulk of our population is from the East and I have heard our alfalfa honey praised so often as being free from that strong, disagreeable twang so common in Eastern honey, that I am surprised to hear this report from Mr. Miller. But, then, there are all kinds of tastes, and I would be pleased to see every one get the honey they like, and lots of it.

The shipping of a mild-flavored, light-colored honey, such as alfalfa, to a market where strong, twangy, throat-burning honey is wanted, is a mistake, except that the Western honey is searching for a market, and the effort will continually be made to educate the tastes over to alfalfa honey. Regarding amber honey, I agree with Mr. Miller that it is very attractive, as much so as the white.

I do not think that the bee-keepers of the West can afford to blend their honey to the extent the Eastener can. The Westener will do better to sell his alfalfa honey on its merits of flavor and color, and at the rate it is being shipped into the East I do not see that the consumers are dropping its use as fast as they are taking it up.

There are certain districts in the East that seemingly can not get enough Western comb honey (alfalfa), and others that absorb large quantities of extracted alfalfa.

Our Colorado people eat honey as I never saw it eaten in the East. It is common for some of our Boulder grocers to sell a hundred cases (24-lb. cases) of comb honey, and a ton or two of extracted, in one season. People will eat alfalfa honey in large amounts more readily than they will the stronger-flavored honeys. Alfalfa honey is *eaten*, Eastern honey is only *tasted*.

The condition Mr. Miller speaks of is easily explained. The home-grown honey is soon exhausted, and the dealer, in order to supply the demand, sends his customers some of the alfalfa honey of which there is a large supply, only to find it does not give the satisfaction in every case because it was not the same as they (the consumers) got before.

The Cost of Honey-Production

Not long since I had the pleasure of hearing an address by Joe Wing, on "Some Phases of the Live Stock Industry." In telling of his work for the Tariff Board, in determining the cost of wool-production at home and abroad, he made some striking statements. In making a trip through Michigan, interviewing sheep-owners, he did not find one man in 50 who knew what he was making or losing on sheep. Many a one found upon figuring that he was losing, and making up on other farm products. Changes in methods would have remedied this in many cases, but some quit raising sheep when they realized they couldn't do it except at loss.

The instance of the old German grocer who could not tell what his selling cost was, is a parallel case. When questioned further if he knew whether he was making or losing money, he replied:

> "Vell, when I starts in business, I rents store-room, house, go in debt for goods, wagon, horses and all. Now I has my own store paid for, my own house, no mortgage, my goods are all paid for; I has money in the bank, and an 80 acre farm. I thinks I am doing pretty well making some moneys. I don't know how much."

These cases cited illustrate the position of many bee-keepers. They are doing well, but they do not know how well. A few points may awaken ideas as to the advantage of more thorough methods.

An apiary in the West, equipped for comb or extracted honey, represents an investment of $7 or $8 per colony. Some cost less, some more. Probably the average bee-keeper requires about one dollar's worth of supplies per hive each year. In my own apiary, I find that the work of caring for my bees, preparing supplies and packing the honey, requires about 25 days per 100 colonies.

At this rate, one man should be able to care for 500 or 600 colonies of bees with little hired help. If each of us could get at the cost of producing our crop, and at the same time introduce more systematic methods, we would soon be able to care for probably twice as many bees as we now think possible.

There is one point that is very evident as I become more familiar with Colorado bee-keepers. That is, that management counts for far more than the yield per colony. The specialists who are producing extracted honey and are making the most money, do not average over 50 pounds to the colony, and this at 7 cents per pound is not a very large income per colony.

I have maintained for some time that a comb-honey producer who could average one case of honey per hive, could do well if he had an economical system of management. What we need is to cut out the fuss-fuss and dabble; eliminate the useless motions, and hold the essential principles in the living-room of our minds.

Growing Nectar-Rearing Plants and Treee

A county bee-keepers' asssociation in Ohio is going after honey-flora in the right way, telling the railroads they can save their embankments by sowing sweet clover. I should like to see our bee-associations become militant, and raise their membership fees to about $10 a year, the money to be spent in furnishing trees, such as basswood at cost to whomever would plant and care for them. In Colorado the planting of catalpa and the locusts is urged for furnishing fence-posts, and these are both honey-bearing trees. Orchard men are planting alsike clover in their orchards, and here is a chance for help if the bee-associations could furnish the orchard men with seed at a reduction in price.

Sweet clover is coming into its own, and it is up to the bee-keepers to help the farmers in finding out its value. The associations over the country could each appoint a committee to gather sweet clover seed, cleome seed, and seed of any other valuable honey-plants, the committee to be paid say $2 each per day, and the seed to be sold to members and others as far as it would go, at actual cost. I think every association should have a few members who would be willing to spend a few days each year at this work. There are seasons here in the West when sweet clover, cleome, and other honey-plants get well-nigh killed out, and it would be profitable for the association to make efforts to get these plants re-seeded so that the range may remain valuable for bees.

There are hundreds of acres of seep-land in the gulches on the sides of the mesas on the Western Slope in Colorado, that are good for nothing but pasture, and sweet clover will improve it as pasture. Then, I have seen sweet clover and alsike growing together in these gulches.

Alfalfa will be cut earlier, as the dairy industry comes into the West more and more, and we shall have to see to it that our ranges are supplemented by other honey-plants. The alfalfa seed districts will always furnish honey, and the alfalfa when plowed up and put in wheat will contain considerable bloom that will help out, but the immense expanses of purple bloom are not so plentiful as they once were, and we shall have to look out for it.

The developing of an alfalfa of greater honey-bearing qualities is doubtless possible, but we have no one as yet working on it, and I do not think we can expect anything of this kind very soon. We can collect sweet clover seed and cleome seed now, and we can line our roadways with basswoods, locusts and catalpas, and have alsike in our orchards. It may not pay us to plant these alone for their honey, but basswood makes a beautiful shade, and catalpas and locust are valuable for fence-posts as well as shade. What shade-trees are planted might as well be honey-bearing, because they then add a perfume and sentiment to the roadsides, and who does not appreciate the hum of the bees?

SOUTHERN BEEDOM~

Conducted by Louis H. Scholl, New Braunfels, Tex.

"Keep Better More Better Bees"

That motto of the late W. Z. Hutchinson, to "Keep More Bees," appealed to the writer long ago, and that was one of the aims with which we started out, and was responsible for our large number of colonies now. But we have found that there was another essential in connection with keeping more bees that was overlooked by many extensive bee-keepers, and that was the matter of keeping not only large numbers of colonies of any kind of bees, but *better bees*. That has been our aim in bee-keeping, and unconsciously at first, almost, we found ourselves not only "keeping more bees," but striving to "*keep better more better bees.*"

There is a whole lot in this. To number the colonies by the hundreds is all right, but to have these numbers of better bees, makes a great, big difference. It means that only average crops will be obtained with the former, but the latter will give enough more in return to warrant keeping better more better bees. Our experience has taught us this, and therefore our motto shall continue to be, "Keep Better More Better Bees," and our aim shall be to live up to it constantly.

Advantages of Divisible Brood-Chamber Hives

At this time of the year the writer receives many enquiries asking for information about the shallow, divisible brood-chamber hives used so successfully and extensively in our large number of apiaries.

The question, "What are the advantages of the divisible hive?" has been asked more than any other, in spite af the fact that we have mentioned these from time to time. But there are always new readers as well as those who did not give the matter more thought when they read the articles of ours on that subject, and for this reason it will be well to go over the ground again, perhaps a little more fully than at any previous time, since new ideas creep out as one works with the bees.

Presuming that the readers know that we use the *10-frame* hive, bottom-boards and covers; that the bodies of the brood-chambers and the supers are all alike—5⅝ inches deep—and that the frames in both are the same, shallow Hoffman self-spacing frames, 5⅜ inches deep, with plain top-bars ⅞-inch wide and ½-inch thick, without a goove or saw-kerf on the underside to receive the foundation, we are ready to proceed.

One of the main advantages is the interchangeableness of the various shallow stories, or the frames from one part of the hive to another. Aggravating indeed it is when the apiarist would like to place a comb with some brood or honey in the super above, to entice the bees up into it, or when he wishes to place a comb of honey from the super into a brood-chamber where stores are needed immediately. And that is the trouble found in apiaries where deep hives are used for brood-chambers, and shallow supers above them. It might be argued that the same full-depth bodies should be used for supers, but this is impracticable in this day and time of shallow supers, for not only comb honey but extracted honey as well. Besides, it is the brood-chamber in which the divisible shallow-frame stories play the most important part, and give us advantages that we can not obtain with the deep hives.

One of the most serious objections against deep-frame brood-chambers is the fact that the bees store a rim of honey above the brood and up to the top-bars and seal it there. This once here, the bees are loth to go over this and above to work in the supers when these are given. To get around this trouble without going to a lot of work about extracting the honey—which, especially in extensive bee-keeping, is out of the question—is *the main reason* why the divisible brood-chamber hive was adopted by us. By having the brood-nest in two shallow stories we can alternate these and keep the rim of honey away from above the brood. By putting the upper story with the honey in it below the one on the bottom-board, the bees will remove the former upper rim of honey now in the middle of the brood-chamber and make room for the queen, and as there is brood in the upper story, the bees must go above this into the supers and store the honey exactly where the apiarist wants it. Thus the two halves of the brood-chamber can be exchanged whenever it becomes necessary to do so, which, however, is not needed more than the first time with most of the colonies, once they are well started the super-work. Thus keeping the colonies busy and contented keeps them from swarming, and they store larger crops of surplus honey instead. This is one of the greatest arguments for the shallow hive.

This advantage of alternating the shallow stories before the honey season ever begins, is one of the best ways of stimulating brood-rearing, and securing tremendous colonies of bees for the honey-flow. With the deep-frame hives this is not so easily done, and the prevention of the swarming fever can not be so absolutely accomplished without much work and fussing, as compared with the ease by which it *can* be done with the shallow hives. And it is well known that if this can be prevented half of our yearly battle is won, and our profits from the larger crops of honey obtained will be greater.

Either as brood-frames or for comb or extracted honey, there is no necessity whatever of wiring the shallow frames like the deep ones must be done. And the saving on comb foundation is a valuable argument in their favor in addition to no wiring, in that thin super foundation, of which there are a good many more sheets to the pound, will fill more frames than the brood-foundation that must be used, and that with wires in the deep frames.

This is a great advantage in producing comb honey that is cut from the frames, as the septum is hardly susceptible in the finished product. For this purpose the deep combs with heavy foundation would be entirely out of the question.

In giving the colonies super-room, especially early in the season, when it is best to give them less room at a time, these shallow supers offer advantages that are worth more than the average person supposes. And especially valuable are they for giving room to weak colonies that can not care for more room, or when the honey season is not a good one; besides, we have found, time and again, that bees do more and better work if less room is given them at a time, and given oftener, even during the best honey-flows. Indeed, the use of them, we claim, are largely responsible for our success in obtaining just a little more honey from year to year than we might have gotten with deep hives.

That is not all, but the giving of the proper amount of room is in such shape that the best work in it can be done—shallow and spread out wide—as near to the brood-nest as it is possible to get it for best results.

And after the work in them is completed, the finished shallow supers are removed "in a jiffy," since the bees can be easily driven from them with a small amount of smoke after the cover is raised. This fact alone has enabled us to remove more honey from the hives in half an hour than can possibly be taken off in any other way, and it is possible to remove all finished and sealed honey much earlier than with deep combs, as it takes longer to seal the deep ones entirely. At certain times the latter are not finished entirely at all, and the consequence is that they are removed with part of the comb unsealed. With the shallow supers the upper one is entirely complete, while the lower ones are only partially so, and taken off without disturbing the lower ones, and a better grade of honey is obtained.

With deep frames it often occurs that brood is in the lower half of the combs, while the upper part is perfectly sealed. Some bee-keepers, yea many, remove these and extract them entirely, resulting in a product that is not very palatable to those who know something about such things. With the shallow supers the upper one is removed without any of the brood of those below. And the same applies remarkably to the instances when honey-flows slacken up suddenly and the greater portion of the upper part of deep comb-honey combs is sealed over but can not be removed without great loss on account of the lower portion being unfit for the market, or can not be removed at all until after later flows. With the shallow supers the upper part is removed, the lower left to be finished during the next flow, and so on.

The honey once in the honey-house, the delicate combs make the finest comb honey. For extracting, the honey-knife uncaps them so much more rapidly with one stroke of the knife that it does not take much longer to uncap them than deep frames. And if this oft-repeated argument—that too many frames must be handled and uncapped were true, the time saved in removing the honey from the hives, handling the frames by whole cases or stories instead of singly, the ease of uncapping, the saving of comb foundation, together with the numerous advantages in the bee-yard and elsewhere—all of which enable us to accomplish just so much more—overbalances so largely this objection that it is not worth mentioning.

But if we mentioned *all* the good points—how well they are adapted for queen-rearing; for finding the queen-cells along the bottom-bars of the upper story by simply tilting it up and looking underneath; how easily rapid increase can be made with them; swarming prevented, and a dozen others—it would be necessary to write a book on the subject, so we refrain.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

An Old-Fashioned Winter

Following a month of warm weather during December, the first two weeks of the New Year we were treated to a very cold *old-fashioned* winter variety. At this date (Dec. 17) there are signs of a change to warmer temperatures, which will be welcomed by the bee-keepers, as the bees will have a chance to move about the hive a bit. Of course it is too early for colonies to suffer very much as yet, unless short of stores—in that case it is a common thing to find the bees starved in the hive even if there are stores in some other places except where the bees had been clustered.

Italians vs. Blacks as Foul Brood Resisters

Answering Mr. Foster's question (page 11) about Italians being more immune to foul brood than blacks, I would say that here in Ontario the claim is made only when the term foul brood is applied to the European variety, commonly called "black brood." So far as I know, very few, if any, claim that they are more resistant to the well-known variety commonly now called American foul brood.

As to robbing, the Italians are certainly worse than the blacks, but, of course, it is a fact as well that they defend their own hives better than the blacks. Carrying out this reasoning, it seems quite clear that the Italians stand to contract the disease oftener by robbing than is the case with the blacks; and, indeed, this has been my experience with the disease. But as to resisting the disease after it is contracted, any claims made along that line are, in my opinion, pure "moonshine."

Bee-Keeping at the College at Guelph

These notes are being written at the Agricultural College, Guelph, Ont., where I am spending a few weeks. The different Short Courses are in progress, and among these classes the bee-keepers are quite conspicuous. About 40 are in attendance regularly, while many others from different points drop in from day to day. Well-known bee keepers have been giving lectures among the most prominent being Mr Clark, of Borodino, N. Y., E. R. Root of Ohio; and H. G. Sibbald of our own Province. Mr. Root will give an illustrated lecture one evening during his stay, and, judging by the interest displayed in the various classes, it looks as if the hall will be well filled. These Short Courses in connection with the different agricultural industries can not help but be a great help to the attendants, as the courses of lectures and demonstrations given are of an intensely practical nature.

So-Called Sting-Proof People

On page 7 something is said about "people whom bees will not sting," and while there may be rare instances of this kind, as Mr. Doolittle claims, I have yet to meet the first one. True, I have more than once met men who made that claim, and when they were inclined to boast about it too much, it has always given me great pleasure to shatter their illusion when the opportunity presented itself. Notwithstanding what Mr. Doolittle says, I have an idea that under some circumstances bees would sting *anybody*, and I would like very much to test the matter out on some of these "sting-proof" fellows.

Blending Honeys

Telling tales out of school is against the rules, but sometimes a subtle hint of some of the facts adds to the gaiety of life.

Not so very long ago I was a guest of the Ontario Bee-Keepers' Association, at a convention held in Toronto, and in speaking of the magnificent honey displayed in all the markets, and at the show of farm products then being held, I commented on the extracted honey all being nearly water-white, and suggested that if the bee-keepers would practise blending their honeys, and doing it with judgment, they could sell their off-colored (*i. e.*, not white) for as much as their best. Such a mess as I stirred up! A stocky little chap named Byer, fairly overwhelmed me with his criticisms; then another and another "sailed in," but when they held up long enough for me to ask a question, it developed that not one of them had given it a careful test. That made me feel just a little better, and I began to think that possibly some of them might give my suggestion some consideration, and some day try it, when there slowly rose another man. I braced myself for another assault, and this was what I heard:

> "I have for years been blending my honey as advised, and selling it in and around Toronto for the same price the rest of you secure for your white honey."

The silence which followed was audible. ARTHUR C. MILLER.

Providence, R. I.

[The foregoing is given as a brief reply to Mr. Byer's item on page 13, and as it came in late, we did not refer it to Mr. B. for his approving comment. But we'll risk his objection. The joke seemed to be on some Canadians. G. W. Y.]

CONTRIBUTED ARTICLES

"Is Sugar Good for Bees?"

BY C. P. DADANT.

The American Bee Journal for November, 1911, contains a quotation from the British Bee Journal with the above title, in which "A Roman Bee-Keeper" condemns the use of sugar in feeding bees, and ascribes to this practice the diseases and mortality among bees in Great Britain as compared with Italy. The editor very properly contradicts this statement, and cites Samuel Simmins in the defense of sugar. As the American Bee Journal editor asks for statements giving convincing proofs that good sugar is harmless, I wish to add my testimony on this subject.

The elder Dadant was the first successful importer of queens from Italy on a large scale. Before our importations of 1874, there had been but very few queens imported. Grimm alone had made a large importation from Germany, but this was colonies of bees and not queens only. The successful transportation of queens was much more difficult than that of full colonies. The previous importations of Wagner, Colvin, Mahan, Langstroth and others, were confined to a few queens, with very irregular success, the bees in most cases dying of diarrhea, or from an overloaded abdomen. No one knew exactly the conditions required. It was not until my father's unsuccessful trip to Italy, in 1872, which was almost a disaster, that the conditions necessary to succeed were ascertained.

The main requirement to keep the bees that escort the queen from dying on the trip, is a food containing as little nitrogenous substance as possible. Pure white sugar was found the most assimilable food, next in line being the light-colored honeys similar to white clover, containing a minimum of pollen. Thanks to the faithful efforts of the Italian Giuseppe Fiorini, who followed our instructions to the letter, we secured hundreds of queens with less than 5 percent of loss, even though some of them were a month or more on the way. From these beginnings came the practise of putting up queens and bees with sugar candy in lieu of honey. It is now proven by daily practise the world over, in the matter of mailing bees, that the food that contains the least amount of water and nitrogen is the best to keep them healthy in confinement. Dysentery or diarrhea appears when the bees have been long confined upon water food or unhealthy stores, such as fruit-juices harvested late in the fall, honey-dew from aphides, or fall honey containing a large amount of pollen-grains floating in it. Good sugar candy or thick sugar syrup always carries bees through in good shape.

The trouble, if any, in England, has perhaps been from the feeding of bees for winter with syrup when they were in bad condition and had a certain amount of unhealthy food already stored in the combs. No apiarist who follows a line of economy will feed his bees sugar syrup when they have an abundance of good honey. It is unnecessary and troublesome. But when there has been a failure in the honey harvest, the bees are more prone to store fruit-juice in the last warm days of fall. The apiarist then makes up the shortage with sugar. He should previously remove all this unhealthy food. If he has not already done so, he may charge his failure to the sugar syrup, when he should charge it to his own ignorance of the conditions and requirements.

That there is but little feeding with sugar syrup in Italy, as stated by "A Roman Bee-Keeper," owing to the high price of sugar there, is true. But that there is less disease there than in countries where they feed sugar when needed is incorrect. Foul brood is far from being unknown in Italy, and the "May disease," which is similar to, if not identical with, the "Isle of Wight disease," has stricken entire districts from time to time. To illustrate this, I need only refer to the May, 1905, number of L'Apicoltore, of Milan, in which the editor says:

> "One thing, however, we hold in apprehension—it is the fear of the 'mal di maggio,' which afflicted us last year, and not ourselves alone. It is a grave malady which causes the total loss of the spring crop and lessens that of summer without counting that the decimated colonies do not succeed in recovering the needed strength, and suffer thereby until the following year."

In the January, 1906, number a long description is given of this disease as it ran its course among the bees in the Marche districts, especially in the Province of Ancona.

Those who are acquainted with bee-culture, in our Western States, know how much trouble bee-keepers have had in a few of the best honey-producing irrigated valleys, with foul brood, in spots where both the excellent honey crops and the low prices of honey on the local markets have made the use of sugar syrup impracticable.

I unhesitatingly assert not only that I positively know sugar to be harmless to the bees, but also that the feeding of good sugar syrup, where the bees are short of stores, is immensely preferable to the feeding of honey of unknown origin. It took years and years before the bee-keeping world became willing to accept the assertion of D. A. Jones and others, who, after Schirach, stated that foul brood was transmitted mainly in the honey. Cheshire examined honey from diseased colonies, and because he failed to find traces of the bacillus there, condemned this assertion. But it is no longer a theory, and we have at last come to accept the ideas of Schirach, published in 1769, which indicate the fasting of bees as the only positive cure for foul brood. Every day more proofs of the validity of this claim come to the front. We are slow to progress. It took centuries before the rotundity of the earth and its motion around the sun were accepted otherwise than as being the vagaries of cranks and sinners, and we still have people who deny Haeckel's and Darwin's "evolution" evidences. But I am running away from my subject.

Good sugar syrup, or properly made sugar candy, is equal to the best honey for bees that are to be confined a long time, whether it is for transportation or for winter. But for spring feed, for breeding, the requirements are entirely different. We then need watery food. This will be clear to our mind if we watch the adult bees in quest of water at the risk of their life in cold, spring days, when the breeding has begun. It is also clear that nitrogenous food is needed—witness their search for pollen at this time and in lieu of pollen, flour, meal, etc., which they eagerly gather. A friend suggested, years ago, that we should make the syrup very thin when to be used for breeding, and serve it warm to the bees. This proved an excellent idea. If plenty of pollen is to be had, at the same time, I do not see why the bees would suffer. Such food is certainly better than doubtful honey or nothing. However, no one would consider syrup as superior, or even equal to wholesome honey at that time. As long as there is no confinement, honey loaded with nitrogenous matter is harmless, and is probably much the best for brood-rearing, owing to its well-known pre-digested condition.

But I would be tempted to consider sugar syrup as best when the May disease is feared, were it not that some experimenters have reported the disease to occur even in colonies that had been fed with this substance.

Paralysis, vertigo, the May disease, the Isle of Wight disease, and constipation, appear to be different names applied to varied forms of the same malady. The exact cause will sooner or later be found, but it is certainly not in sugar syrup. "Bacillus depilis," and the newly discovered "nosema apis," are both charged with it, but a number of dissenters object, apparently with good reasons. The disease is not new. It is mentioned by Della Rocca, Huber, and Bevan. The last-named writer calls it "vertigo." Hamet, who places constipation and vertigo under two different heads, reports the existence of both diseases as an epidemic in France in the middle of the 19th Century. And as to foul brood, we all know that Aristotle mentioned it 330 years before Christ, and many centuries before sugar was manufactured.

I believe it is as unreasonable to object to sugar as food for bees in seasons of scarcity as it is foolish to recommend the extracting of all the honey in the fall to replace it with sugar syrup, whether the honey was good or not, under the plea of economy or profit, as was done by some a few years ago.

Hamilton, Ill.

No. 2.—Improving the Honey-Bee

BY ARTHUR C. MILLER.

The increased honey-yield which is possible by even a reasonable amount of effort in selecting and breeding bees is little realized by the majority of us. At every assembly of bee-keepers the works of individual colonies are recounted, but rarely does one hear of any intelligent attempt to perpetuate the good results. An interesting exception to such condition came to the writer's attention a few years ago, and has been watched by him ever since.

A professional honey-producer had often noticed the differences, and made effort along the usual lines, but with only indifferent results. About 1905 he learned of some of the more advanced ideas on breeding, and began anew his efforts to improve his stock. His first step was a careful study of all his colonies in an effort to find one at least possessing marked superiority to the rest. He took special pains not to be misled by any possible results of manipulation or environment, and he finally picked 2 colonies as possessing desirable characters considerably above the average stock.

From one of the colonies he reared 36 queens the first year, allowing them to mate as they would. The second year he reared from the original breeder 92 queens, making every effort to mate them to drones from the queens of the previous season's rearing. This was done by forcing to excess the drone-production of those queens and suppressing the drones of other colonies.

The second year the colonies headed by the young queens of the selected stock showed honey-production much above the average of the rest of the yard. The third year found him with 125 colonies of the selected stock, and 84 of other grades. The selected stock yielded much more than the others.

During the season of 1909 one apiary had 250 colonies of the select stock, and yielded an average of 40 pounds of comb honey per hive, while another apiary—one that he bought, on equally good pasturage—with the same sort of hives and treatment, yielded him but 22 pounds per colony, over half of it extracted. The results seem to prove beyond dispute that he found and perpetuated a true and valuable mutation or "sport."

One of these queens was sent to the writer in 1908, too late to show what the bees would do as honey-producers, but early enough to permit the queen to build up a full colony of her own bees. During the following winter and spring their hardiness was carefully compared with that of a strain of known character, and they ranked exceedingly high. During 1909 many of the drones from this queen mated with queens of the writer's stock, and in every such instance the drones stamped their character strongly, being decidedly dominant over the queen stock. In reciprocal crosses the same dominance of the new strain was apparent. It was very easy to determine what the crossings were because the two strains were very different in color, shape and sundry reactions.

It is the writer's belief that if bee-keepers would pay less attention to color and more to the habits of their bees they would gain knowledge of them which would be of great help in tracing blood. And until control of the mating of queen and drone is secured we must depend upon such scrutiny to identify and retain the results of our labors.

If color is "fixed," as it was in the two strains just cited, then it is a very valuable ally; but color is perhaps the most variable part of the bee. Few of the commercial queen-breeders pay any further attention to the drones they are to use than to take pains to suppress those from mothers whose workers are not well marked, and as drones from the average run of even the better strains of the yellow races are in coloring quite variable, it is small wonder that color is not often to be relied on. But there are queens which produce drones as uniformly marked as the most critical could wish, and by use of such drones color may become a dependable factor.

Observations lead to the belief that queens usually mate near home, and that it is the drones that wander far a-field, but if a little pains is taken to obtain a supply of a few thousand drones from a selected queen, and suppress all others in the immediate vicinity, it will be found to be rare that a queen will mismate. As a result of many years' work, it is the writer's conviction that with reasonable pains along the lines indicated in the foregoing, it is possible to make much progress in breeding bees, perhaps almost as well as if mating was under positive control.

The persistent efforts of the bee-keeper referred to herein, coupled with his natural ability, has produced results not only gratifying and profitable to himself, but exceedingly valuable to the rest of us as an example of what can be done.

Providence, R. I.

Combination Device for Swarm Prevention and Comb-Honey Production in Brood-Chamber

BY WILLIAM C. POOLE.

A new method for obtaining comb honey in the brood-chamber and the prevention of swarming was experimented with by Mr. Frank Darrah, in his apiary at Van Cortland Park, N. Y. While visiting Mr. Darrah one day at his apiary last spring, my attention was drawn to this experiment which I became interested in, and through the kindness of Mr. Darrah I am writing this article in the hope that some of the American Bee Journal readers will become interested in it and help carry this new method further.

1.—Part of Apiary of Frank Darrah.

The experiment was tried in a hive 20x20x9½ inches, in which was inserted 9 frames of brood and a queen. These 9 frames of brood were centered in the hive, and on each side was placed a queen-excluder used in the same way as the division-board. This queen-excluder was made of the ordinary perforated zinc with a strip nailed on the top so as to let it hang on the rabbets on the two ends of the hive on which the brood-frames hang. It extended down flush with the bottom of the hive to prevent the queen passing under it.

When the brood-frames were put in the hive close together, and the queen-excluder placed on each side, it left room on each side of the excluders to place two comb-honey section-holders. One comb-honey section-holder was placed on each side of the hive at the bottom with 4 sections in each, 4¼x1½x1⅞ inches, and another section-holder was placed on the top of each

2. View of Hive Showing Sections in Brood-Chamber.

with the ends of the holder made high enough to reach the rabbet of the hive which the brood-frames hang on, and by nailing a little strip on the top of these section-holders it would rest on the rabbet holding the brood-frames. By having the two section-holders on each side it would enable one to put 16 sections in the brood-chamber.

The super used on this large hive would contain 36 4¼x4¼x1⅞-inch sections, which, in the case of Mr. Darrah, when looked at on July 23d last, were filled and capped ready for taking off.

The great advantage of this method is in putting in the sections early in the spring in the brood-chamber when the first honey starts to come in, as at this time the bees store excessive amounts in the brood-combs, and tend to crowd the laying space of the queen; and later, during the warm weather, it tends to lower the temperature of the hive, which is usually congested with bees and brood. In my case the bees filled the outer combs completely full, and the other combs over one-third full, but by the experiment of Mr. Darrah, this congestion was overcome and gave the queen ample room to lay.

It was thought by friends of Mr. Darrah that the bees would fill these 16 sections partly full with pollen, but to their surprise there could be found not even a trace. As soon as these 16 sections are filled they could be replaced by another set. The frames in this hive of Mr. Darrah's were filled with brood and eggs, even to the outer frames.

3—Part of Apiary of Wm. H. Poole & Son

This method would be an expensive one for a man having several hives in his apiary, but it would be profitable for him to have 5 or 6 of these hives in his apiary to use in the spring in building up the colonies which did not winter well, by giving them one or two frames of brood from these large hives. The bee-keeper who tries this experiment will find it profitable both in getting frames of brood from this strong colony, and also in obtaining a honey-flow from the brood-chamber in the spring and fall.

It is hoped by the writer that this experiment will be tried by other apiculturists, and that he will hear more from them through the columns of the American Bee Journal.

Yonkers, N. Y.

Fumigating Comb Honey, Etc.

BY F. GREINER.

A portion of our comb honey was removed from the hives July 1, and stacked up in the honey-house. It was the intention to fumigate it after a week or 10 days, and some stacks were thus treated. Indeed, the most of it was subjected to the fumes of bisulphide of carbon. My sulphide gave out, and when we crated the untreated honey, we found some infested with the wax-moth larvæ. Particularly were such cases affected containing pollen. A very few sections were utterly ruined; others were only slightly damaged, and we crated them with the No. 2 grade, after they had been cleaned up by the bees. A colony, which is being fed liberally, either for the purpose of finishing up unfinished comb honey or to supply them with winter stores, may be trusted to do the work of restoring such slightly damaged honey after the honey season has come to a stop.

In one of our yards the late crop was not taken off until frosty nights came in September. It was a very simple matter to remove this honey. We needed neither escape-boards nor smoke. There were no bees in the supers. This late-taken-off honey was not sulphured, and no wax-moth larvæ made their appearance.

We neglected or omitted to have our extracting-combs cleaned up by the bees, as has been our custom. The extracting was done late in July. These combs have not been molested by the moth, and have not been sulphured.

Insets in Sections—Beeways.

Can any one tell us why insets to beeway sections should be cut deeper than ⅛ inch? We adopted a section with ⅛ inset over 30 years ago, and see no reason to have them different. The regular 4¼ section used to be made with insets or beeways ¼ inch deep; the present make is about 3-16. I was duped with a 4x5 lot one time which had insets ¼ deep. I had omitted to specify the depth of the beeway in my order. I must say I did not like such sections, particularly as the top and bottom bars of all my wide frames were calculated on the ⅛ inset.

Is there any good reason for providing beeway supers for comb honey with more roomy passage-ways than no-beeway section supers? If so, what is the reason?

Bisulphide of Carbon.

Bisulphide of carbon is very handy to use for fumigating honey and combs, but is more expensive than burning sulphur. Our druggist charges 35 cents per pound, which is absolutely prohibitive. In Rochester I can buy the stuff at $1.00 per gallon, and a gallon weighs 10 or 11 pounds. At that rate I can afford to use it on account of its handiness, although even at this price the sulphur at about 3 cents is much cheaper to use.

Bisulphide of carbon is sold in gallon tin cans, at least I thus bought it. For safety's sake I stored in an empty bee-hive out in the apiary. Before being more than half used up, holes appeared around the top of the can which were not observed until all the sulphide had escaped. The lesson to learn from this is to keep such volatile fluids in earthen vessels and well corked.

An Experience with Bee-Veils.

The silk tulle bee-veil is perhaps the most comfortable protection a bee-keeper can wear. However, they easily tear when used over a common straw-hat, although sometimes I had one last me 2 or 3 years. Of late I have tried the Alexander veil with satisfaction, but I had to make some alterations before it was safe. The vulnerable spots were at the back of the head where the wire-cloth touches when bending over, and on top of the head where not a few of us are lacking that desirable and natural covering—hair.

These defects of the Alexander veil may be remedied. A light, short leather strap going half way around the head may be sewed or riveted to the wire-cloth about 3 inches from the upper edge in such a way that it keeps the wire-cloth away from the head. An extra piece of burlap fastened in the crown will give protection for the top of the head where the hair is missing. I received quite a few stings in these spots before I made the described alterations, and now the trouble is over.

German Introducing-Cage.

The wire-cloth introducing-cage, brought out of late, will be recognized by those familiar with the practise of the bee-keepers in Germany, as a substitute for the "Pfeifen deckel"—the wire-cloth cover of the porcelain tobacco-pipe of old. It has given the very best satisfaction to the bee-keepers who have tried it, and has very commonly been used in Germany for a great many years.

Bottles for Feeding Bees.

For slow feeding and for giving water, the German bee-keepers often use ordinary bottles, either arranged in the upper story or also as atmospheric entrance-feeders.

Naples, N. Y.

Address to the Michigan Bee-Keepers

BY PRES. E. D. TOWNSEND.

Friends and Members of the 42d Annual Convention of the Michigan State Bee-Keepers' Association:

It is with a good deal of pleasure that I am allowed the honor of presiding at this meeting, and without further preliminary I will suggest a few subjects for the consideration of this assembly that may be of interest to this and subsequent meetings.

The first and perhaps the most important question I would bring before this convention is, Shall we become an auxiliary to the National Bee-Keepers' Association, as the new Constitution adopted by the members last month provides?

You will have an opportunity to decide this question at this afternoon session. If this new move of the National, adopted at their last meeting at Minneapolis Aug. 30 and 31, be accepted by this Association, *i. e.*, that we become an auxiliary to that body, this may be the last meeting of the Michigan State Association of bee-keepers.

I would call the attention of the members to the fact that the new Constitution drawn up and approved at the Minneapolis meeting of the National, is somewhat of an experiment, as there was no precedent to go by, and that no member need hesitate about voting for it's adoption on account of some minor defect it may contain, for ample provisions have been made in the new Constitution for adjusting any defects.

If we decide to become an auxiliary to the National, I would advise that local members be elected to fill the several offices of this branch of the National for the ensuing year. I would also advise that the offices be of an honorary nature, *i. e.*, without compensation. The members will see the advisability of this when I say that I shall use my influence to make this branch a permanent one, with annual meetings, or oftener, as the members see fit.

I would also recommend that this Association consider at this meeting the matter of appointing an organizing committee of two in each of the following centers: Detroit, Lansing, Jackson, Kalamazoo, Grand Rapids, and Traverse City—with the idea of organizing a branch of the National at each of these locations during the month of January next.

This Association was the first, I believe, to offer its service to the National as an auxiliary, so let Michigan be the first to be thoroughly organized along these lines.

There are other locations that need to be organized, and these can be seen to in the future. If Michigan can start the year with seven auxiliaries, we ought to be satisfied.

This (1911) has been a very disastrous year with us, in as much as we have lost two of our most prominent members since our last meeting in Grand Rapids, a year ago. The committee I will appoint upon resolutions will kindly give this matter its due attention. I recommend that suitable resolutions of regret be mailed to the widows of the two departed members—Mr. Hutchinson and Mr. Hilton.

The year 1911 has not been up to the average from the honey-producers' standpoint. Many will be tempted to sell their bees after such a discouraging year. I would advise the members to "stick to the bees." Further, I would suggest that this would be just the time to buy more bees, as likely many will be offered for sale, and at satisfactory prices.

We need a new law upon bee-diseases in this State. Whether anything ought to be done at this session of our Association toward this end I will leave to the members to decide.

In conclusion, I want to impress upon the minds of the members the importance of being well organized when in need of anything from our Legislature. If the scheme I have outlined heretofore in this paper is carried out, that of organizing in all the main centers of the State, I predict it will double our membership in the State. This larger number of members will have a great influence upon our Legislature and Governor.

Remus, Mich., Dec. 1, 1911.

Order and Tidiness in Apiary

BY G. M. DOOLITTLE.

"Order is heaven's first law," is an expression we often hear used. But when some of us travel about and visit the apiaries of different bee-keepers, we are compelled to admit that all do not have this matter of suitable neatness and order established in their minds. Brother and sister bee-keeper, I wish to impress upon you that ours is a noble pursuit, and therefore we should deal with it as such. Let us not degrade it by slipshod and slovenly work.

Our methods need not be of the poorest kind, even though we do not feel justified in having palace hives for our bees to occupy. There is no business that compares more favorably, nor that is more capable of being carried out in a beautiful way than is apiculture. Apiculture is sometimes called "the poetry of agriculture." And from this standpoint it seems almost like a desecration to see hives at all angles, and at all points of the compass, as though some "joy rider" had lost control of his automobile when passing near the apiary, and the hives had been tossed about in all directions by some intruder who had "lost his head."

I know that there are those who claim that a promiscuous placing of hives is necessary in order to secure the safe return flight, when the young queens go out to mate, but with a practical demonstration of this matter during over 30 years of rearing queens both for home consumption and to supply the trade, I consider this more of the fancy, or from relying on an oft-repeated dogmatism, rather than having any foundation on fact. Especially is this true where a proper distance is given between each hive or colony.

So many times have I seen apiaries kept in slovenly shape that I wish to make a plea for system, neatness and orderliness. I remember going, some years ago, to the apiary of one of "our great lights" in bee-keeping, and finding the hives not only standing at all angles, and in all directions of facing, but from 5 to 10 would be "thrown" together in a clump, while the vacant places in the enclosure for the apiary would have accommodated all the hives, had they been properly spaced, with an abundance of room sufficient to warrant the safe return of every queen. Not only this, but the grass and weeds were nearly or quite as high as the tops of the hives, while poor, pollen-laden bees were struggling and losing their loads by trying to crawl through the grass to reach the entrance of their home. Then in several places in the yard, and in the corners of the same, were piles of rubbish mixed in with hives, covers, and bottom-boards that had gotten out of repair, the same being allowed to lie there and rot instead of being stored in the repair-shop ready for a profitable entertainment for the apiarist on some stormy day.

Then it almost made my heart ache to find in another corner a pile of several hundred frames of comb which had too much pollen or drone-comb in them to be considered worthy of keeping longer, as they were in the hives all thrown in together, many of the combs already being more or less consumed by the larvæ of the wax-moth, while the rain and the weather were twisting and rotting the frames which held these combs. Besides this waste, this slovenly manner of affairs was breeding more wax-moths then 100 careful and tidy bee-keepers would do, while these same moths would go out to inconvenience and annoy those who had with great pains gotten their apiaries nearly or quite free from the same.

Then on going to his shop and honey-house, the shop-floor was covered with sawdust, shavings and dirt to the depth of an inch or two, with pieces of hive-stuff thrown in promiscuously, while the honey-house part of the same was littered up with all sorts of odds and ends, and every available space piled full of a miscellaneous collection of "traps and calamities."

The reader may say that it takes time and money to keep things tidy and orderly. But I wish to say that it does not take nearly so much time in the long run to do our work, as it did this noted apiarist, who was so noted by his writings and words on the floors of our bee-conventions. In our beginning, it may take a little more time and money to fix or make an appropriate place for everything; and it may take a little more time always to put everything in its proper place, thus having a place for everything, and having everything in its place, instead of dropping them where they are last used. It does take a little time to keep the grass mowed in the bee-yard. All of this I am willing to admit, but this is but a "drop in the bucket" when compared with the waste of both time and money which comes to the one who has no place for anything, and allows his bees to wade through "standing timber" before they can get home with their loads of honey; while the moths are eating up and ruining the wax in the combs which are of much money value, even when turned into wax. Therefore, in the end, it is time and money saved, and something which I consider of far more importance, it is temper saved.

A man can accomplish much more work when he is in a contented, good-natured, happy frame of mind. And even from a dollars-and-cents point of view, such a frame of mind contributes to a more profitable investment. And nothing is more conducive to this frame of mind than always to find everything in its place. Of course, the money part of our business must be kept in view; otherwise, in this day and age of the world, it is "over the hill to the poor-house." But in my over 10 years of bee-keeping life I have noticed this: The most profitable honey crop is never obtained in a slovenly manner. And this can be said equally when speaking of farming, manufacturing, merchandizing, or what not.

I know that neatness and order in and of themselves alone do not insure success; but that trait of character that does everything along these lines so thoroughly, so tidily and so orderly, is the trait which brings success. Properly spacing the hives, keeping the bee-yard mown at the right time, cleaning out the shop and honey-house, will not of themselves bring success; but the bee-keeper who can so arouse himself, or herself, that they will see the necessity of having things "done decently and in order," and the help and inspiration which comes from so doing, will not stop there. These will adopt better methods whenever such are seen and found, carefully scan the bee papers and books for all such methods, and get better implements, etc., when needed, to carry out these methods.

I have been all the more free to write as I have here, because for some years of my first bee-keeping my apiary and honey-house were of the "heart-ache" kind; but a visit to one who kept everything up "in shape," and who made bee-keeping a success in every way, taught me a lesson which I have never forgotten. Borodino, N. Y.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does not answer bee-keeping questions by mail.

Keeping Queen Over Winter.

An Italian Queen that I received last summer I placed in an observation hive, and the bees are all dead but a few. I like the queen very much and would like to keep her until spring. Could I put her in a full colony of black bees with another queen? My bees are all in the cellar. Maine.

Answer—If you put the queen into a hive with another queen she will be killed. If you kill the black queen, then two or more days later you might pretty safely put into the black colony the frame from the observatory hive with all its bees and queen. Still safer would it be to put the queen into an introducing cage when you put her into the black colony.

Foul Brood in Trees, Houses, Etc.

More than once in convention reports, I have read where it was directly stated or intimated that bees do not have foul brood in trees, buildings, etc., and now in the December number of American Bee Journal, page 371, A. W. Smyth, in an extract from Irish Bee Journal, says: "No one has found foul brood in bees . . . . in any home not purposely made for them." I should like to know on what this common belief is founded. If this is the rule, I know of at least one exception, as I took a colony of bees from a house, which colony had European foul brood, and I cannot see any reason why such a home for bees should be exempt from the disease. New Jersey.

Answer—I do not think that the opinion prevails on this side the water that bees never have foul brood "in any home not purposely made for them." Indeed it has been urged that one reason why it was so difficult to get rid of foul brood was because of diseased wild colonies. Why should not a wild colony be exposed to precisely the same dangers as one in a Langstroth hive? Your one case is enough to prove that bees may have foul brood in a home not specially prepared for them.

Bees Dying on the Snow.

I have no practical experience with bees, and they are bothering not a little. There is now about ten inches of snow on the ground here, and my bees seem to be flying in it and perishing more than common. Jan. 5th, when I came home from school, the snow was dotted all around in front of the hives where they had flown out, and it was exceedingly cold, down almost to zero, and no sunshine to lure them out. On the morning of Jan. 6th, I went out to scrape the snow off the alighting-board. A few bees flew out in the snow and perished. There was no sunshine and the thermometer showed ten degrees below zero. I thought that bees were always dormant, or, in other words, frozen too stiff to fly when that cold.

Yesterday, Jan. 7th, I went to look at my bees and I counted fifty out on the alighting-board frozen, besides what were in the snow on the ground, the alighting-board being covered with snow. They had all come out that day, too, for I cleaned them all off the day before. Yesterday evening the sun came out for a little while, and though it didn't shine in the entrance they came out more than ever, perishing in the snow, it being down to 0. I have but four colonies, two of them are packed with hay and leaves, a winter-case being on the outside of them, and one of the remaining being in a dove-tailed single-walled hive without any packing absorbents on top, and the other in a large box-hive. The first two named do not seem to be acting so badly as the latter, especially the box-hive colony, and I am especially anxious for it to winter well as I want to transfer it in the spring. The bees do not need a flight for they had a good cleansing flight a week ago yesterday. The box-hive bees keep up a sort of roaring, buzzing sound like summer-time. It is chock-full of bees. West Virginia.

Answer—Bees do not become entirely dormant, although nearly so. The chief trouble in your case is the excessive cold, and the noise you hear in the one hive is the regular thing when bees are very cold. The bees are exercising to keep warm. It will help matters if you will pack something over and around the bees to keep them warmer. Old coverings of any kind will answer, or even corn-stalks. You might try putting a board up in front of the hive to prevent the light shining in, but as you say they come out when the sun is not shining, it may not do much good. But there must be nothing left to hinder the free flight of the bees when it comes a good day for them to fly.

Dampness Over Bees—Moldy Combs.

1. Please let me know the cause of dampness, and how to keep it dry over the bees. My bees are wintered outdoors on the summer stands, 6 inches off the ground on skids with a few winter-cases on some, and tar-paper and boards over the covers of the others. They are on 8 and 10 Hoffman frames, in dovetailed hives, and protected on top so there will be no leak. All is tight at the top. The entrances are from 3/8 by 2 to 3/8 by 6 inches. This line of hives runs east and west, facing south where the sun shines on them from all sides; no shade trees. During December, the weather being mild, I looked over them and the burlap in the supers was damp. All burlap is washed so it is clean when it goes over the bees. I put in as much burlap as the supers will hold, but a few are not quite as full, so that they are as damp as the full ones.

2. Will moldy combs be cleaned up in the spring by the bees that have been in the brood-nest, through this dampness I have spoken of? New York.

Answer—The moisture in the hives is from the breath of the bees. So you see there is no way to prevent it, the only question being the best way to get rid of it. Sometimes it condenses on the side-walls of the hives and runs out of the entrance of the hive. In your case it has settled in the packing above the bees, which is not such a very bad way, and a good deal better than to have is settle on some solid surface above them, so as to fall in drops upon the cluster of bees. When the packing becomes wet, it is a good plan, when a warm day comes, to dry it out in the sun or by the fire. Very likely there is no more dampness in your hives than there should be, but it may be well to mention that having the entrance too small may apparently increase the dampness, for a good-sized entrance allows at least some of the moisture to escape in that direction.

2. Yes, the bees will clean up such combs nicely. They may be given one at a time in the brood-chamber, for too many at once is rather discouraging to the bees, especially if very mouldy. A good way, also, is to put mouldy combs in a brood-chamber and put it under a strong colony, so that the bees will pass through it in going and coming.

Leonard System of Curing Foul Brood.

I have recently made the discovery that there is American foul brood in one of my yards of 113 colonies. Would you consider it safe to try to eradicate it on the plan spoken of on page 63 of the proceedings of the last National Convention, called the "Dr. Leonard System?" If not asking too much I should like to know your opinion of this method, very briefly stated. Texas.

Answer.—Dr. Leonard's plan is a variation of the Baldridge plan. I have never seen many reports of it, but I know no reason why it might not be successful if carefully carried out. The theory is that when a bee leaves a hive it goes empty, so does not carry any of the infected honey with it, and then when it returns from the field the Porter escape prevents it from entering the old hive and obliges it to enter the clean one.

Hives in "Shook" Swarming.

Will you state to what extent it is important, or well-nigh indispensable in "shook" swarming, that the hive into which the bees are to be shaken is "exactly" like the old one? As when one wants to practice this without increase, the one hive is of temporary need only—not over a month—it would seem desirable to use a home-made box for a hive which would save expense; especially when having double-walled hives, one would have to have a duplicate set of the most costly hives manufactured for regular sale. Pennsylvania.

Answer—When a hive is exchanged for another, the bees will notice the change if there be much difference in the size or shape of the hive, and still more if there be a difference in color. Yet they go by loaction mostly, as you will see if you take away their hive, leaving nothing in its place, for they will for a considerable time fly in front of the vacant place before they turn aside to any other hive. So although it may trouble the bees to have a hive of different appearance given them, they will in a little time become reconciled to it. At the same time the more the *front* of the hive looks like the old one the better.

Reversing Alexander Plan of Dividing.

1. Referring to the Alexander method of preparing colonies for division, by placing the older brood above an excluder until sealed, and the queen with open brood below upon the bottom, I would like to divide as early as there is sufficient brood, and for that reason would like to know if the process might not successfully be reversed, the queen being placed above the excluder, and the brood for sealing below, and thus avoid desertion of the queen by reason of unexpected cold, which has been reported by one observer.

2. How soon, with respect to the quantity of brood in the hive, would you consider it wise to make such division?

VIRGINIA.

ANSWER—Yes, the queen may be put above the excluder, leaving the brood below, although you will probably not like it quite so well, for the natural thing is for bees to work downward with the brood.

2. It is doubtful if the plan can be most successfully carried before the brood reaches its maximum, or nearly that, say 6 frames of brood. You say that in one case the queen in the lower story was deserted by the bees on account of the cold It's dollars to doughnuts that in that case the operator was in too much of a hurry, and the colony was not yet strong enough for division. If the colony is sufficiently strong, there is little danger that the queen will be deserted in the lower story. But you can make sure that the queen will not be deserted by leaving one frame of brood below. Just by way of a special favor, I'm willing you should try dividing one colony very early, but the rest you would better let alone till about the time bees swarm naturally. Make haste slowly.

Queen Questions, Etc.

1 Will a virgin queen-bee sting a person while handling her?

2. Will a queen-bee die after stinging another queen to death in a hive? Or does a queen never lose its sting while stinging other queens?

3. Does a queen die soon after she loses her sting?

4 Are bees that have more bands better than those that have less?

5. Are there any 6-banded bees? Or are there bees that have still more than 6?

6. Please tell me some of the advantages that bees with more bands have over those with less, and *vice-versa?*

7. What is the color of European foul brood?

9. How can you tell the difference between the two? My bees never had it so I don't know what it is.

8. What is the color of American foul-brood?

10. Isn't a metal-spaced frame better than a staple-spaced frame, in case you move bees once in a while?

11. Will an Alexander feeder fit under a double-walled hive just as well as under a single-walled hive?

ANSWERS—1. No.

2. In a royal combat, the one queen is killed while the other does not lose her sting and is entirely uninjured.

3. I don't know; I never had a queen lose her sting.

4. Yes, and no. Bees with more than two bands are better than those with 2 or less. Some think that bees with more than 3 bands are better than those with only 3, while a large number prefer those with 3 bands.

5. I've never heard of more than 5.

6. I don't know enough to tell all that. There is the advantage of looks, for the more bands the more beauty. In the pure Italian stock, as imported from Italy, the workers each have 3 bands. Some of those bred in this country with more than 3 bands are said to be better bees, while others say they are not so good.

7. The unsealed larva, instead of being pearly white as in a state of health, is of a distinctly yellow tinge, becoming darker as it dries, until very dark brown or black.

8. The dead larva is coffee-colored.

9. The most striking difference is in the matter of stringiness. Thrust a toothpick into a larva with American foul brood, and as you draw it out it will form a string an inch or more long, while in a case of European foul brood it will string out half an inch or less, perhaps not at all.

10. Some prefer one, some the other. I prefer a heavy galvanized shingle-nail to either.

11. I don't know from experience, but if I am not mistaken the feeder will go with either.

Putting on Comb-Honey Supers—Glass Hives—Miller Feeders—Growing Basswood—Working with Bees.

1. Is it just as good to put comb-honey supers filled with super foundation on a colony 3 or 4 weeks before the honey-flow? If not, why?

2. Has any one ever tried to introduce any of the famous California sage in the Eastern States? If so, with what results?

3. I have been intensely interested in glass observation hives, but have never tried any yet. I would think that in a one-frame small enclosure, the bees would be inclined to swarm. How can a person keep them from it?

4. Does honey gathered from fruit-blossoms that have been sprayed, kill the old bees or the brood?

5. I have 2 Miller feeders, and I fed my bees some in them last fall, but I didn't get very satisfactory results. I made syrup, two parts sugar and one water, and filled the feeders half full and placed them on strong colonies; they were 4 or 5 days in removing it, and it took colonies of medium strength 8 or 10 days to remove half a feeder full; there were plenty of empty combs to store it in, and several of the bees drowned in the feed, especially when I would refill them.

6. I would like to set out some basswood trees in the spring. There are but a few basswood trees around here, and I have never noticed any small sprouts Could I propagate them from dormant cuttings made in the spring, or from seeds that have hung on the trees or laid on the ground all winter?

7. I would like to work for a month or so with some apiarist in the busy season in the spring. I should prefer to work in Ohio, Pennsylvania, Kentucky, or other adjoining States, and with an apiarist that produces comb honey. I am 16 years old, and think I can do a man's work in heavy work. I have kept a few bees since I was 12 years old, but haven't had much experience with them, for I have never handled them much. Do you know where I could secure such a place?

WEST VIRGINIA.

ANSWERS.—1. Decidedly not. As long as 3 or 4 weeks before the honey-flow there is pretty cool weather, and especially cool nights. Putting on a super at that time would cool off the hive and hinder brood-rearing. It is well, however, to put supers on about 10 days before the harvest, for then the weather is not so cool, and the harm done by cooling off the hives will be overbalanced by the advantage of having the bees become familiar with the upper story and having it there in readiness to be used just as soon as needed. As you are probably in a white-clover region, you will do well to put on supers as soon as you see the very first white-clover blossom.

2. Quite likely some one has tried it, but not successfully, or else it would have been reported.

3. I think there is not generally much trouble in that direction. If you should anticipate danger, extract some of the honey from the comb, and if that does not seem to give the queen room enough, exchange the comb for one nearly or quite empty.

4. Both.

5. Likely it was somewhat late. Bees make slow work on feeders when the weather is cool. You can help matters by giving the syrup pretty hot. Bees dying in the feeder is something unusual. I don't know why it should happen.

6. Basswoods are difficult of propagation. I don't know how you would succeed with cuttings, but with the same advantages that florists give cuttings in greenhouses, you might come out all right. Thousands of seedlings come up for me each spring from seeds that have lain in the ground over winter, but for some reason that I don't know they always disappear before fall or the next spring.

7. I don't know of such a place, but a small advertisement in this journal would likely give you the information.

A Beginner's Questions.

I am wintering 12 colonies of bees outside this year, in single-walled hives. I removed the air-tight oil-cloths last November, and replaced them with coarse sack-cloths, filling the upper story with dry wheat-straw, also dry wheat-straw and oats covered the hives, on all sides except the front. The water-tight covers are over all. I feel that is right, as I read the Langstroth book.

1. Should the coarse sack-cloth be removed and replaced with oil-cloth next March, or is it better to keep on the coarse sack-cloth till May?

2. Can I feed water to bees without sweet foods next March?

3. Why is rye-flour put into the hives in March?

4. Where can I put rye-flour into bee-hives?

5. Which do you like to keep better, a two-story colony, or a one-story?

6. Has a two-story colony always two queens—one in the upper chamber, and the other queen in the bottom?

7. I put a heavy canvas over the bee-entrances for sheltering from cold winds. Is it right? When warm days come I open the canvas. Should I put the canvas over the entrances in cold weather?

8. I want 2 queens in a two-story colony. Should I put a honey-board between the two stories?

9. Do you remove drone-cells in April?

10. Are drone-cells larger than worker-cells? INDIANA.

ANSWERS.—1. If the bees have plenty of food, better not disturb them till warm weather. No harm if the packing is left on till May or June.

2. Yes, bees will take water without any sweet in it, and they will be likely to go after water about as soon as the weather is warm enough for them to fly. It is a good plan to have water provided close at hand, so they need not have to fly far for it with the risk of getting chilled. A good way is to have a vessel of water in a sheltered or warm place near the apiary, with 2 or 3 inches of cork-chips on the water. You can get the cork-chips from any grocer who has grapes come in kegs, as generally he throws them away.

3. Rye-flour and other meals are given to the bees as a substitute for pollen.

4. If you want to put it in the hive, you can sprinkle it into the cells of a comb. But it is not generally put in the hive, but outside. Put it in a shallow dish or box outside in the sun, and if the bees are in need of it they will take it from there. But if they can get plenty of natural pollen they are not likely to touch the substitute.

5. Unless a colony is very strong, one story is enough for it. If strong enough, it can have 2 stories up to the time of the harvest, when one brood-story will be left.

6. No, there is only one queen.

7. Such shelter answers a good purpose; only it must not be so close as to hinder the free entrance of air into the hive.

8. There must be a queen-excluder between the 2 stories. Even then you will likely find one of the queens missing before a great while.

9. Drone-comb may be cut out any time after it is warm enough for the bees to be flying freely. But the bees will be likely to build drone-comb in the vacancy unless you fill in patches of worker-comb or comb-foundation.

10. Yes, drone-cells measure about 4 to the inch, and worker-cells 5 to the inch.

Candy-Cakes for Winter Feeding.

Last season (1911) was a total failure as to the honey-crop, and the bees hardly got enough to live on during the summer, and consequently did not get any stores for winter use. I started to feed them syrup the last part of September and the first of October, but on account of my business keeping me away from home most of the time, the feeding became very insufficient, and unless the bees are fed in some way soon, they will starve before spring opens, which here is not until May. Will it do to take granulated sugar mixed in honey, make it into quite solid candy, roll it out nearly the size of the top of the hives, and lay the candy flat over the top-bars, and cover it with cloth or gunny-sacks? I keep my bees in the cellar in a dark place, where the temperature during the winter varies from 36 to 45 degrees. I have kept bees for 3 winters, and they have always come out in nice shape, but they have always had plenty of stores before. I have 16 colonies. This country is probably not the best honey-producing country, but last year (1910) I got from 50 to 100 pounds per colony.

I do not know whether the above suggested feeding will work or not, but I thought this way would be least disturbing to them. Possibly the candy will melt and run down on them. The colonies are small so the heat will probably not be very great. I have no frames with honey, and cannot get them.

MINNESOTA.

ANSWER.—You're all right in your plan. The only question is: How do you mean to make that candy? If you mean to heat it so as to melt both honey and sugar and make it into a "solid candy," all right; only be *very* careful you don't overheat it. It will be cheaper to let the bees starve than to kill them with scorched candy. If you mean to make so-called "Good" candy, all right again, provided you don't do exactly as you say, but use powdered sugar instead of granulated. Maybe you'll get it under the name of confectioner's sugar. It would do to use granulated sugar, only it may be too wasteful, for the bees are likely to reject the coarse grains of the granulated. No doubt you have books that tell you just how to make this candy, but it may be no harm to give a few hints.

You can make it by using the honey cold, merely mixing the honey with the fine-grained sugar, but there is danger, especially in cold weather, that you will not get enough sugar kneaded in, and then the candy may become thin afterward and run down. It is better to have the honey warm—hot, if you don't scorch it—and then stir in all the sugar you can. When you have stirred in all the sugar you can, then knead some more in. Then let the candy stand in a warm place 2 or 3 days and you will find you can knead in some more.

REPORTS AND EXPERIENCES

Cans of Hot Water in the Bee-Cellar

Honey was a failure with me last year; too much rain. It rained nearly the whole season, but we had a fall flow, so my bees filled their hives for the winter. I put in the cellar 100 colonies, and ever since New Year's Day I have had to fight to keep the temperature at 40 degrees. I put in the cellar 5-gallon cans of hot water, night and morning, and I succeed in keeping the temperature 44 to 46 degrees. The warmest it has been outside in the last 19 days is 4 degrees below zero, and 47 and 50 degrees below 4 times, but most of the time 35 below, and some days with a gale of wind. Yes, it is cold! G. C. CHASE.

Robbins, Wis.

Nectar-Dearth and then Severe Cold

Hemmed in between city houses I have 15 colonies of the finest Italians hereabouts. But immediately after a cold snap of 20 degrees below zero, a heavy snow fell closing the fronts of the hives for several days. After the cold spell a pint or more of dead bees lay on the bottom-boards, which I scraped out with a yard-stick. Of course, I take it that the cold killed the bees, as they had abundant stores, but have wondered if the snow closing the entrances may have conduced to the wholesale slaughter. Last summer's dearth of nectar, with this winter's severe cold, has been a severe test for bees, although I have hives wrapped with tar-paper, and supers filled with autumn leaves and grass. Some of my colonies were weak in the fall, but all have pulled through so far. MRS. FREDERICK GRIFFITH.

Kansas City, Mo., Feb. 1.

Cold Weather—Feeding Bees Loaf Sugar

Beginning with the last day of December, and continuing for two weeks, the mercury fell below zero every night but one. The range was from 4 degrees below to 32 below. Last Sunday morning it was a few degrees above, but on Monday morning it was 20 below. Since then the weather has warmed up a little. There is considerable snow on the ground, and there has been much drifting. The entrances of my bee-hives have been closed with snow most of the time, and I did not make any great haste about removing it. Yesterday, and a few times before, I lifted the cushions and quilts of some hives in order to note the conditions, as far as a momentary glance would enable me to do so, and to insert a little feed right over the cluster. In order to do this I needed to raise only one end of the covers for an instant, and then they were dropped back. I found the bees much livelier than I expected, and also found they had not lost their disposition nor ability to sting. The interview was so short, and the weather so cold I had not thought they would welcome me in that way.

The feed I gave was, at first, cube loaf-sugar slightly moistened, about a quart to the colony, but the supply failed and there was none in town. Then I went to giving unfinished sections that had honey in them but shall return to the cube loaf-sugar as soon as I can get a supply from Chicago. The grocery men here have the face to ask 12½ cents a pound for it. A mail-order house's price is $1.60 for a 25-pound sack, and a trifle more per pound in smaller lots.

I do this feeding as a precautionary measure. Some colonies do not need it, and some *may*. You do not know which is the needy one, and can not find out at this time of the year. EDWIN BEVINS.

Leon, Iowa, Jan. 18.

Entire Failure from Dry Weather

The past season was almost an entire failure. In the middle of the season we were obliged to feed to keep the bees from starving. I have fed 20 pounds of sugar and honey to all each colony of my bees for wintering. Forty years ago we had a similar experience. This is owing to dry weather.

Lee, Mass., Dec. 29. A. BRADLEY.

Following Up Experiments

While it is not best under all circumstances to try everything we read in the bee-papers, the fact still remains that "in a multitude of counsellors there is wisdom," and it only remains for the recipient to use it properly. If no one had thought enough of Benjamin Franklin's experiments to have followed them up, see the conveniences this age would have lost.

Rocky Ford, Colo., Jan. 8. A. S. PARSON

A Badly Bee-Diseased County

Monterey county is rotten with foul brood at the present time, and all our bee-keepers will lose considerable. We have a county bee-inspector who has no advice to give in the least, or rather knows nothing about any bee-disease whatsoever, and is about 10 years behind the times. The only thing he can do very well is to destroy an apiary when no one is at home, by ransacking every hive and turning them inside out looking for disease, and knows nothing after doing so; while the average apiary is as nearly rotten with foul brood as it could be throughout the county. Almost all the bee-keepers have the common California black bees, and they go like hot-cakes when anything hits them. Nearly all have the common cracker-box hives. The American Bee Journal is the only thing that does the bee-keeper any good. Some inspectors know nothing, and at the same time rob the county of so much.

Salinas, Calif., Jan. 8. WM. F. HACKMAN.

Done With Sealed Covers

The winter of 1911-12 will long be remembered by the bee-keepers of this locality. For one thing, it has forever knocked the sealed-cover business in the head for me. I winter and have for years before without the loss of a single colony with a feeding-board over the colony with 2 holes for feed ing in the board. The deep hive-caps are packed with chaff. Last fall over some of the holes I had propolized cloths: 8 colonies so fixed smothered. The bees had broken cluster and were scattered over the hive—very large colonies, too, with plenty of honey. The combs were iced and frozen. No more sealed covers for me.

I hear of very heavy losses here. One man with 28 colonies has only 6 alive now. For one thing, the honey here is very bad. There was lots of honey-dew last year, and, of course, the effects of that will come later on, but it is snowing now, and there is so much snow around it's too cold for a good flight. I hate to write so discouragingly, but every bit of white clover is killed here. Well, white clover always comes back, and I look for a good year in 1913. We must take the bad with the good in this life, and be thankful for it might be much worse.

Marceline, Mo. IRVING E. LONG.

Early Swarming in California

What do you think of bees swarming on the 23d of January? A bee-keeper of San Rafael, Calif., asks why the bees should swarm with a few eggs, no larvæ, or sealed brood, and just a little store of honey. The writer had to "fess up," it was too much for him.

We have had some fine rains, and hope the entire State has been having the same kind of rainfall, as some of the bee-keepers are beginning to fear a poor season, etc. We had two spells of hail, and only for a few moments, but no damage. We also had two distinct crashes of lightning with the following of severe and deep thunder—a very unusual proceeding in this section of the country; to my knowledge this is the 4th electrical storm since September, 1908. Not many, is it? And the natives prefer earthquakes to cyclones or thunder-storms, any time.

The bees are bringing in plenty of pollen, and as the almond trees will soon be in bloom, the season for some early honey will be at hand. With early feeding it would be an easy matter to have some nice section honey by the middle of March.

The hyacinths, crocuses, tulips and lilies are all out; in fact, we could have the calla lily to bloom all the year around, with a little extra care and attention.

J. C. FROHLIGER.
Berkeley, Calif., Jan. 26.

An Encouraging Canadian Report

The past summer has been a rather poor one in this part of Ontario. The weather was too hot and dry for the honey-plants to yield much honey. I had 10 colonies to start with in the spring of 1911. They stored about 500 pounds of surplus honey, about 100 sections of comb, and the rest of it extracted, besides 7 new colonies as an increase. I had only 2 natural swarms. Two of my best colonies stored 120 pounds of surplus honey. I had all the honey sold before Christmas. I sold over $20 worth of honey this year around home. Before I started bee-keeping I don't think there was one dollar's worth consumed around here. I sold $1 worth to a lady who keeps a little country store about a mile from our place. She had some honey to sell before she got mine, but she couldn't sell it, so that made it very difficult for me to persuade her to take mine, but at last I told her if she couldn't sell it in a reasonable length of time I would take it back, so she took it and sold it in a short time.

This year I put my honey in flint-glass jars with metal screw tops. I used two sizes; one holds ¾ pound, and the other 1½ pounds. When these are put up with a neat label they look very tempting, and sell like hot-cakes.

I use some full-depth Langstroth hives, and some divisible ones, and I hardly know which is the better. My hives are all single-walled, but I'm going to make some chaff ones this winter. I have 20 colonies packed in winter quarters. This is the way I pack them:

About the last of September I look through the colonies and see that each one is strong in bees, and has about 35 or 40 pounds of good honey or syrup. Then about two weeks later I go to one end of the row of hives and take off the cover and quilt and lay sticks, 10 inches long and ½ inch square, over the tops of the frames; then lay 2 or 3 thicknesses of burlap 16x20 inches over, and put on a full-depth super, and fill it nearly full of chaff. I then put on the cover and wrap the hives, sides and tops, with tar-paper, one ply thick, and fasten it with laths and small nails. I leave the entrance 14x¼ inch. I find this a very satisfactory way of wintering bees. I remove the packing about the first of May.

I owe a good deal of my success to the American Bee Journal, and wish it every success. R. R. VICTOR TIPPETT.
Quays, Ont., Jan. 11.

Cool Weather in California

We are having extremely cool weather here this winter, the coldest for many years, and no rain to amount to anything as yet.

M. H. MENDLESON.
Ventura, Calif., Dec. 30.

Buckwheat Yield—Cyprian-Carniolan Bees

In the American Bee Journal for December, 1911, on page 358, there is a difference mentioned as to nectar in buckwheat. Its yield is all day if the sun does not shine. Take a hot, cloudy day and the bees will gather through the day. I lived on a farm from 1863 to 1897. We had a field of 9 acres so that the snow-water would fill every spring in half of this field. So we would sow it to buckwheat. About 1875-6 we had this lot all in buckwheat. When in bloom we had 3 days of cloudy, hot weather, and the bees worked from morning until dark. But when the sun began to shine again you could not see a bee after 9 to 11 o'clock a.m. I never saw bees filled so heavy with nectar as in those 3 days. We could smell it 50 feet from the hives.

Late in September, 1909, I bought a Cyprian queen, but it turned out to be a Cyprian-Carniolan. I did not see any drones or workers until May 20th, then there were drones by the thousand—two drones to one worker. The workers had 2 narrow bands; drones were dark gray on the upper side of the abdomen, but a little yellow under. The last day of June she came out with a prime swarm; on the 8th and 10th of July the second and third swarms; on the 20th of August, from hive 16 with 1st, 2d, and 3d swarms, and did not fill one section of honey for myself. In 1910 and 1911 the old queen led a swarm. I hived them in hive No. 11 on dry comb, but not one section of honey did I get. All they are good for is drone-laying workers and drones. Here is a list of drones caught in cages in 6 days:

Hive No. 15—117, 144, 225, 260, 315: total, 1061.
Hive No. 11—308, 400, 500, 370, 165, 467; total, 2210.

They are great to rob; have been robbing all summer—not a day but what they can be seen around other hives. E. TUCKER.
Bergen, N. Y.

Stimulative Feeding

In July, 1911, at my last extracting I found on a comb in a super a very fine capped queen-cell. I then went to 2 very strong colonies and took from each a frame containing mostly larvæ and sealed brood, and put them above in the same colony about 10 a.m., and left them there until 2 p.m., so as to get them covered with nurse-bees while the fielders were busy.

I then went to another vigorous colony, put a queen-excluder over the brood-chamber, and after taking 3 frames from its super I put in the 2 frames of larvæ and sealed brood, also one frame with a queen-cell, thereby getting the heat of the colony below. In a few days I had as fine a queen as I ever saw, the attendants being mostly young bees that knew no other mother, and would stay with her. I put the 3 frames with 2 frames of honey and filled the balance of the space in a hive-body and set it on a new stand. In due time she took to business in Roosevelt style!

In September, the honey-flow being over, she quit laying, and I then put under an Alexander feeder; then true to their natural instinct they stored all around the brood-nest to have it handy next winter.

One night I lay awake studying a way to "turn the trick." During the day I had put some honey-washings in an old coffee-can. In the morning I found the can turned over and slowly leaking, and then said to myself: "I have to put the lid on tight and punch in a few holes and insert it over the brood-nest." I awaited results, which came in a small stream out of the front of the hive. Defeat No. 1. I kept on punching can lids until I had one with so small holes that it dropped only 30 times in a minute. With this source of supply they had no sweets to store, but the queen took it for granted that another honey-flow was on and resumed laying, there being an empty frame in the super. One morning, when feeding, I found 2 bits of comb started. I kept on feeding sweetened water, and the bees continued to work, and soon the whole frame was filled with sealed brood. Together we played the game through October and November, when I became tired, and then there was "nothing doing." This is one way to rear bees in Sunny California.

As an experiment in November, I selected 3 colonies as nearly alike as possible in stores, number of bees, and otherwise—Nos. 15, 41 and 43. At that time none of them were laying, but in 8 days the fed ones (15 and 43) had eggs in 3 frames. Here in early March bees gather pollen from the willows, and April 1st I will commence stimulative feeding of the 2 colonies, then compare their condition with No. 41. Many claim that stimulated feeding is a waste of bee-energy. Here our honey-flow usually begins about May 25th, and lasts from 4 to 6 weeks, according to the season. About April 15th I wish to feed so as to get the queen "on to her job," and have the hive boiling over with bees at the beginning of the honey-flow. If no feeding is done, and the weather is cold and wet, they will not build up much until the honey-flow is on. From the beginning of the queen laying to the hatching of bees, 21 days, and if nurse-bees, 15 days longer. How long have they to go a-field before the honey-flow is over? Then I have a hive full of bees to consume what little nectar the old bees have stored. Is not this good logic?

If my experience will be of any interest I will keep notes and report results at the close of the next season. E. P. ST. JOHN.
Descanso, Calif., Dec. 29.

Drones Mating with Young Queens

I think T. W. Livingston, of Leslie, Ga., is "at sea" about drones mating with young queens. Let me say what I have seen in my bee-yard. I do not write about so-called Italian bees, as they are of two distinct races. I have never seen any Italian queens but their drone progeny always varied from 2 bands to a black drone. Where is the queen-breeder that can breed queens that will bring forth all 3-banded drones and workers, not black drones? It can not be done. Do breeders take a black rooster to rear a strain of white chickens? No; I know it can not be done.

Adel, or yellow Carniolan bees, I have bred since 1902—the best bee I have had. I will describe a pure breeding queen of the Adel; She is yellow, and the abdomens of her workers and drones are pure yellow without any black edges on the segments of the abdomen. To prove she is pure we will breed 12 young queens from her worker-eggs. If those 12 young queens' drones are as yellow as the mother queen, she is pure. Those 12 young queens have mated, and mine have mated with pure drones, and their drones and workers are marked as the mother queen's drones and workers, pure yellow to tip, without any black edges on the segments of the abdomen.

Three of those 12 queens were mismated, one with a black drone. The workers vary in color from a bright yellow to a black worker, but her drones are yellow and pure as the mother queen's. Suppose you allow this queen to lead a prime swarm. Her drones are pure wherever she goes. But her young queens, drones and workers will be yellow and black. The other 2 queens have mated with mongrel drones. There will be all colors or shades, but no blacks. Don't allow any young queens to live of those hybrid queens. This is where we get our mixed stock. If you have a pure mother-queen, as I have described; rear young queens regardless of what drone they may mate with. Their drones are pure, so every colony you give a yellow queen to, your stock is yellow drones. When you give each colony a yellow queen, and have yellow drones flying, go over with pure stock, and cull every queen that is not up to the standard.

New York State. H. B. MAN.

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I grow Strawberry, Raspberry, Blackberry and other small fruit Plants, Grape Vines, Shrubbery, etc. My FREE catalog tells the truth and and quotes fair prices for good stock true to name. If interested, write today.
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Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

SAMPLE OF HONEY 10 years old, and Best Mailing Case—free. 12A1y
C. W. Dayton, Chatsworth, Cal.

WANTED—by an expert--bees on shares, or to buy bees. Michigan preferred.
Boyd F. Howard, Union Center, N. Y.

FOR SALE.—Bees, honey, and bee-supplies. We are in the market for beeswax and honey.
5Atf Ogden Bee & Honey Co., Ogden Utah.

FOR SALE—Choice light-amber extracted honey thick, well ripened, delicious flavor. Price 9 cents per pound in new 60-lb. cans.
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BARRED ROCK—bred to lay, and exhibit. Eggs, $2 per 15; $3 per 30. Satisfaction guaranteed. Louis Van Butsele,
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FOR SALE—A. I. Root Supplies. Everything needed in the apiary. Send for catalog. Prices right. Sawyer & Hedden,
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THREE MONTHS' TRIAL for 15 cts. for the bee-journal that "Grandpa" can read. Large type. New cover design. Eight extra pages. The Bee-Keepers' Review, 230 Woodland Ave., Detroit, Mich.

WANTED—All Southern Idaho bee-keepers to know they can get all kinds of Bee-Keepers' Supplies at home. Write for catalog. I have my own factory. C E. Shriver,
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COMPLETE COMB HONEY OUTFIT for 1000 colonies, consisting of 400 Colonies of Bees in good condition. Hives with worker-combs, supers filled with sections, etc. Correspondence solicited from parties meaning business. Address, Frank Rauchfuss, 1440 Market Street, Denver, Colo. 1A3t

WANTED—A married man to run on shares, an apiary and vineyard. Have 4-room house, 5 acres irrigated land planted in grapes, figs, apricots, peaches, blackberries, and other fruit; 72 colonies of black and Italian bees in 8 and 10 frame hives; also outfit for extracted and section honey. Good climate for bees. Write me for any further information desired, and give experience, etc.
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BUFFALO, Leon Co., Texas—Golden and 3-banded Italian Queens. Shipments will begin March 15th. Tested Queens, $1.00 each; 3 Queens, $2 75; 6 or more, 85 cents each. Untested, 75c for one; 3 Queens, $2.00; from 6 to 50 Queens, 65 cents each. I guarantee all Queens to give satisfaction. For larger lots of Queens, write for special prices. If Queen arrives dead, send her back and I will send another. Bees and Nuclei. Bees per pound, $1.00; Nuclei, per frame, $1.25.
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Standard hives with latest improvements, Danzenbaker Hives, Sections, Foundation, Extractors, Smokers; in fact, everything used about the bees. My equipment, my stock of goods, the quality of my goods and my shipping facilities can not be excelled.

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Headquarters of the bee-keepers is usually the Simons Hotel—a clean, moderate-priced house. To secure a room, it will be necessary to write a week ahead of time, and enclose $1.00 in your letter.

We invite every member to renew his membership. We invite every bee-keeper to become a member.

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FOR SALE.—Absolutely pure California sage extracted honey; several cars white and light amber, in 60-lb. tins, two tins to a case. Write us for samples and prices.
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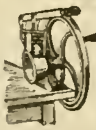

FEED your hens cut green bone and get more eggs. With a **Crown Bone Cutter** you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.

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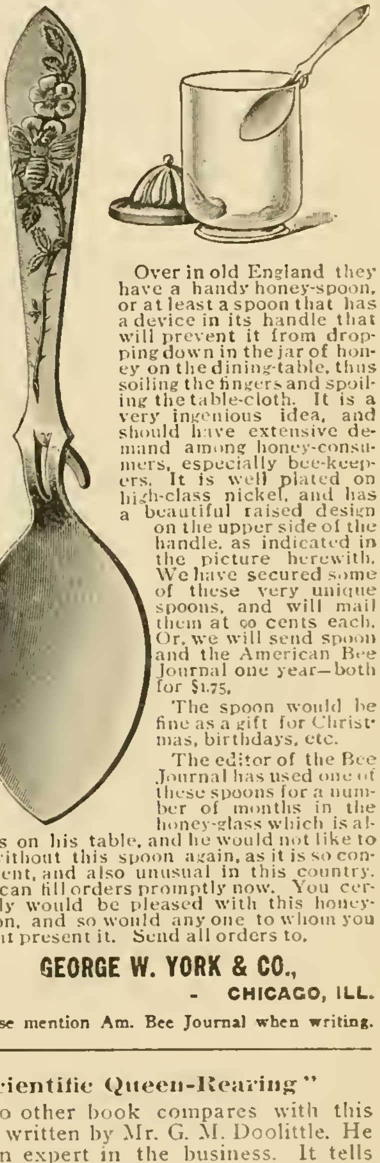
An English Honey-Spoon



About three-quarters size.

Over in old England they have a handy honey-spoon, or at least a spoon that has a device in its handle that will prevent it from dropping down in the jar of honey on the dining-table, thus soiling the fingers and spoiling the table-cloth. It is a very ingenious idea, and should have extensive demand among honey-consumers, especially bee-keepers. It is well plated on high-class nickel, and has a beautiful raised design on the upper side of the handle, as indicated in the picture herewith. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send spoon and the American Bee Journal one year—both for $1.75.

The spoon would be fine as a gift for Christmas, birthdays, etc.

The editor of the Bee Journal has used one of these spoons for a number of months in the honey-glass which is always on his table, and he would not like to be without this spoon again, as it is so convenient, and also unusual in this country. We can fill orders promptly now. You certainly would be pleased with this honey-spoon, and so would any one to whom you might present it. Send all orders to.

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Best White Alfalfa and 2d-Hand Cans

Every bee-keeper should see to it that all who want honey in his locality are able to get it. When your own honey is all sold don't fail to send somewhere else for more, and thus keep the local trade supplied. We have a large quantity of the **Best White Alfalfa Honey** in new 60-pound cans, two cans in a box, which we can ship promptly at the following prices:

One box of 2 cans (120 pounds of honey) at 10 cents per pound; 4 or more cans, at 9¾ cents per pound—all f. o. b. Chicago.

Better order at once, as this grade of honey is not at all plentiful. Winter is just the best time to keep your local customers well supplied. They will like this fine Alfalfa honey, for it is "licking good."

We have a lot of Second-Hand 5-gallon Tin Cans that we have emptied ourselves, so we know they are clean and good. They are all right to use again. We have them crated in various size crates, and, in lots of 25 cans, will let them go at $2.50, or 10 cents each, f. o. b. Chicago. If wanted 2 empty cans in a box, we will furnish them in lots of 10 or more boxes at 30 cents a box, so long as they last.

In buying the **crated** second-hand cans the buyer can make boxes for them if desired out of any odd lumber he may have about his place.

These cans certainly are a bargain. You can get them now and keep them in a dry place until next season when you will likely have need of them. We have a limited number of these second-hand cans, so you better order early.

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American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address all orders to, Geo. W. York & Co., 117 N. Jefferson St., Chicago, Ill.

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EVERY man or woman who raises bees ought to *raise chickens*. The two industries *belong* together. The spare time *from one* fits nicely into the other. Whether or not you own an incubator—if you are *thinking seriously* upon the poultry subject, please write today for

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This is the most *complete*, interesting and *helpful* Year Book we have ever gotten out. 244 pages, 7½x10 inches —profusely illustrated. And it's full to running over with sound, *practical* information and suggestions. For example, it contains eight chapters of information *never before* published, of immense value. The chapters are:

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which places in the hands of our customers the best *poultry facts* and *poultry advice* we can possibly turn out in personal letters, in bulletins, booklets, etc. Working with the customer for his or her success *after* a machine has been bought has been a *cardinal* principle of Cyphers Company's Service. The new *department* is a further development along this line.

Cyphers Company's Service is founded on the results of *fifteen years* of hard work, *close study* and heavy cash investments—on the experience of tens of thousands of customers, on the daily knowledge we gain at the Cyphers Company's $50,000 Experiment and Demonstration Poultry Farm—and on the reports of contests held to discover the most practical experiences in poultry raising.

We are now inaugurating a contest or $1,000 in *cash prizes* open to every one, whether a Cyphers owner or not, for the best reports of actual money-making experiences. This 1912 contest is *fully described* in our big free book.

Be sure to write for the book now —*today*. You will find it interesting, *helpful*—a sure road to greater poultry profits.

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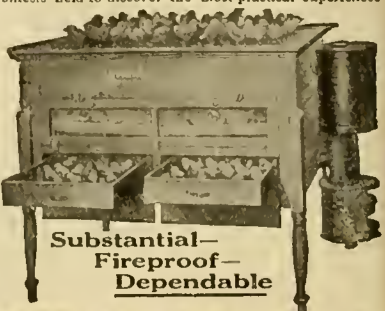
BRANCHES: New York City, 23 Barclay St. Boston, Mass., 12-14 Canal St. Chicago, Ill., 340-344 N. Clark St. Kansas City, Mo., 317-319 Southwest Blvd. Oakland, Cal., 1569 Broadway, London, England, 123 Finsbury Pvt.



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Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil are not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed can be sown any time. From 18 to 20 pounds per acre of the unhulled seed is about the right quantity to sow.

We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents. By express f. o. b. Chicago—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.50; 50 pounds for $6.50; or 100 pounds for $12.00.

If wanted by freight, it will be necessary to add 25 cents more for cartage to the above prices on each order.

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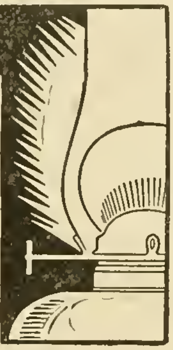

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Select Tested Queens—March, April, May, $5.00; June, July, August, $3.50.
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Shipped to all parts of the world, postage free. Safe arrival guaranteed. International Money Order with every order. Dead queens replaced if returned in 24 hours after arrival. References in respect to financial and commercial responsibility of the undersigned Association can be had at every Imperial-Royal Austro-Hungarian Consulate in the United States and Canada.

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One Tested Queen....	$1.85
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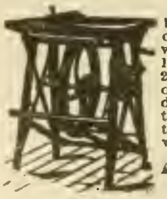

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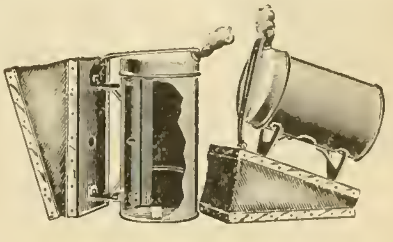

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The **One-Piece** cap **can not clog.** It is the **coolest, cleanest, strongest, best,** and **largest net capacity** of all smokers, selling at one dollar ($1.00). We **guarantee satisfaction.**

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Is to Keep Your Colonies Strong; to do This You Must Have

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Golden **3-Band Italian** **Carniolan**

Untested—1 for $1.00; 6 for $5.40; 12 for $9 60; 25 for $17.50
Tested—1 for $1.50; 6 for $8.40; 12 for $15.60; 25 for $30.00
Nuclei with Untested Queen—1-frame, $2.50; six 1-frame, $15.00
" " " " —2 frame, $3.50; six 2-frame, $20.40
" " **Tested** " —1 frame, $3.00; six 1-frame, $17.40
" " " " —2-frame, $4.00; six 2-frame, $23.40

The Drones used in our Apiary for Mating purpose are reared from the very best selected Queens, which is as necessary as the selecting of a good Queen for Queen-Rearing.

For good Queens and quick service you can not do better than place your order with us. We guarantee safe arrival and satisfaction. Directions for building up weak Colonies will be mailed to you for 10 cents.

The above Queens are all reared in Separate Yards. 2 Atf

W. J. LITTLEFIELD, R. F. D. No. 3, LITTLE ROCK, ARK.

Please mention Am. Bee Journal when writing.

Famous Queens!

From Imported Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $1.50; 6 for $8; 12 for $12.00. Breeders of either strain, $5. For Nuclei, write.

Safe arrival and satisfaction gurranteed.

D. E. BROTHERS,
2A9t **Jacksonville, Ark.**

Poultry Profits Doubled

I bring only 15¢ per lb.
Rooster 4½ lbs
I bring 30¢ per lb.
Capon 8 lbs

CAPONS bring the largest profits — 100% more than other poultry. Caponizing is easy and soon learned. Capons sell for 30c. a pound, while ordinary poultry brings only 15c. a pound. Progressive poultrymen know these things and use

PILLING CAPONIZING SETS

Sent postpaid, $2.50 per set with "Easy-to-use" instructions. We also make *Poultry Marker*, 25c. *Gape Worm Extractor*, 25c. *French Killing Knife*, 50c. Booklet, "Guide for Caponizing," FREE.

G. P. PILLING & SON CO., 23d & Arch Sts., Philadelphia, Pa.

FIGURE THIS OUT FOR YOURSELF

If you buy Bee-Supplies NOW that you will need in April, you save money at the rate of 12 percent on the $.

THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months—¼ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

ANOTHER reason is that we can serve you better now than three months hence. In a few weeks we will be putting up carload shipments for our dealers and distributing centers, and every effort in our big plant the largest establishment in the world devoted to the manufacture of bee-supplies—will be directed to filling rush orders. You will be just as anxious for your goods as our other patrons, and will deserve and receive the same attention no matter what the amount of your order may be, but

We can Serve you Better Now

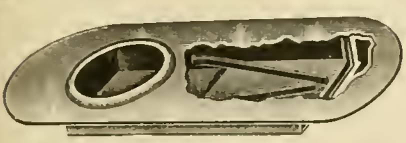
and we want to make it worth your while to place an early order. Try this on a part of your list anyway. Saving at the rate of 12 percent per year ought to interest everybody.

We Manufacture Everything in Bee-Supplies

Get our 1912 catalog which gives descriptions, illustrations and prices on everything from bee-hives to bee-books, from frames to comb foundation. **Get this Catalog NOW.**

THE A. I. ROOT COMPANY,
213 Institute Place, **Chicago, Illinois**
R. W. BOYDEN, Mgr. (Jeffrey Building) Tel. 1484 North.

P-O-R-T-E-R



BEE-ESCAPE

SAVES { TIME HONEY MONEY } At All Dealers

Each, 15c.; Dozen, $1.65, postpaid.

If your Dealer does not keep them, order from Factory, with Complete Instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Ill.

Please mention Am. Bee Journal when writing

Special Prices on Bee-Goods
For 60 Days. Dovetailed Hives

1½-story, $1.35 each. Hoffman Frames, $2.25 per 100. Just make us a Bill of the Goods you might need for 1912, and we will quote Lowest Prices. We make all kinds of Bee Goods. **FINE QUEENS** at all times to be had. Untested, 75 cts.; Tested, $1.00.

CHESTNUT HILL MFG. CO.
1Atf **Biglerville, Pa.**

Bee-Supplies

We are Western Agents for—— 1Atf

"FALCONER"

Write for Fall Discounts—we can save you money.

C. C. Clemons Bee-Supply Co.
128 Grand Ave., Kansas City, Mo.

We Make a Specialty of Manufacturing

SECTIONS

They are the Finest tn the Land—None Better.

Our Prices will make you smile We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

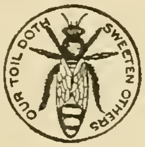
H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE. — One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."


OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

PRICES—by mail—1 for 6 cts.; 2 for 10 cts.; or 6 for 25 cts. Address.

GEORGE W. YORK & CO.
- CHICAGO, ILL.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to to George W. York & Co., 117 N. Jefferson St., Chicago, Ill.

50,000 Copies "Honey as a Health-Food"
To Help Increase the Demand for Honey

We have had printed an edition of over 50,000 copies of the 16-page pamphlet on Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

Address all orders to

GEORGE W. YORK & CO., Chicago, Ill.

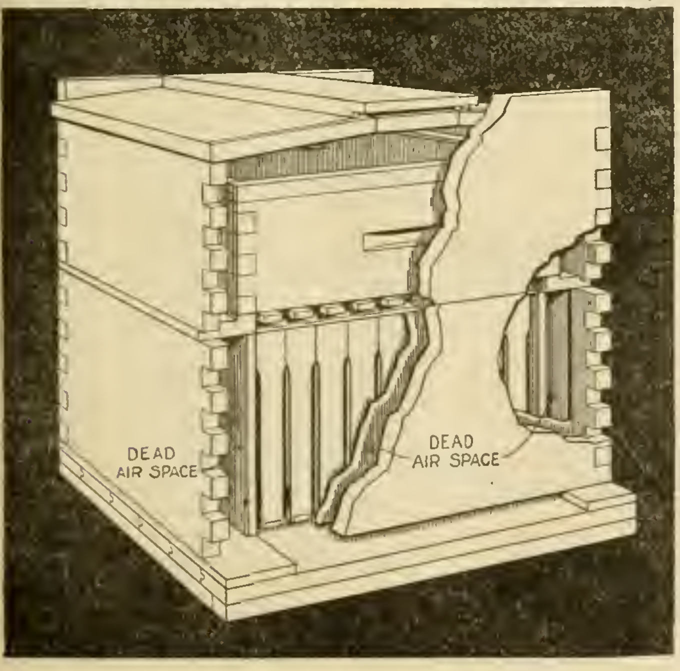
MAKE HENS LAY

By feeding raw bone. Its egg-producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier profits larger.

MANN'S LATEST MODEL Bone Cutter

Cuts all bone with adhering meat and gristle. Never clogs. **10 Days' Free Trial.** No money in advance.
Send Today for Free Book.
F. W. Mann Co., Box 348, Milford, Mass.

Please mention Am. Bee Journal when writing.



Bingham Smokers

Insist on **Old Reliable Bingham Bee-Smokers,** for sale by all dealers in Bee-Keepers' Supplies. For over 30 years the standard in all countries. The Smoker with a valve in the bellows, direct draft, bent cap, inverted bellows, and soot-burning device.

BINGHAM CLEAN BEE SMOKER
Pat'd 1878, '82, '92 & 1903

			each.	mail.
Smoke Engine,	4	inch	$1.25;	$1.50
Doctor,	3½	"	.85;	1.10
Conqueror,	3	"	.75;	1.00
Little Wonder,	2	"	.50;	.65
Honey-Knife,			.70;	.80

Manufactured Only By

A. G. WOODMAN CO., GRAND RAPIDS, MICH.

Protection Hives

The best and lowest price Hive on the market. This Hive has ⅞ material in the outer wall, and is not cheaply made of ⅜ material like some other hives. Send for circular showing 12 large illustrations. It will pay to investigate.

Results Count

When you buy **Comb Foundation** you look for **RESULTS.**

The Dittmer Process Comb Foundation is the right **SMELL,** the right **TASTE,** and the right **FIRMNESS** to give **Best Results.**

The Dittmer Process Comb Foundation is so like **Beeswax** the Honey-Bees would **SHAPE** and **MOULD** for themselves, it makes it very acceptable to them. This assures a **Full Capacity Honey Crop,** and remember, to you, Mr. Bee-Keeper, **Honey is Money.**

A **Liberal Discount** Offered on all **Supplies.**
Write for Prices.

Gus Dittmer Company, - Augusta, Wisconsin.

"The Honey-Money Stories"

This is a 64-page and cover booklet, 5¾ by 8½ inches in size, and printed on enameled paper. It contains a variety of short, bright stories, mixed with facts and interesting items about honey and its use. It has 31 half-tone pictures, mostly of apiaries or apiarian scenes; also 3 bee-songs, namely: "The Hum of the Bees in the Apple-Tree Bloom," and "Buckwheat Cakes and Honey," and "The Bee-Keeper's Lullaby." It ought to be in the hands of every one not familiar with the food-value of honey. Its object is to create a larger demand for honey. It is sent postpaid for 25 cents, but we will mail a single copy as a sample for 15 cents, 5 copies for 60 cents, or 10 copies by express for $1.00. A copy with the American Bee Journal one year—both for $1.10. Send all orders to the American Bee Journal.

"Griggs Saves You Freight"

- TOLEDO -

Is the point to get Goods **Quick and at least cost.**

6 Per Cent Discount

This month. Send list of Goods needed and let us figure with you. Can take **Honey and Wax** in exchange for Supplies.

S. J. GRIGGS & CO.,
24 N. Erie St., TOLEDO, O.

"Griggs The King-Bee."

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Back Vols. American Bee Journal

BACK VOLUMES OF AM. BEE JOURNAL.—We have some on hand, and would be glad to correspond with any one who may desire to complete a full set. It may be we can help do it. Address, American Bee Journal.

117 N. Jefferson St., Chicago, Ill.

An Investment

IN THE

National Orchards Company

WILL BE

SAFE and Highly Profitable.

All necessary conditions for successful Apple and Fruit industry exist at the Company's property.

The Practical Apple-Man will appreciate the fact that the property of this Company is located on the Columbia River, about 70 miles north of the famous Wenatchee Apple District in the State of Washington. The utmost investigation is invited. For particulars write—

National Orchards Company,
117 North Jefferson St., CHICAGO, ILL.

The Campbell System

INSURES your crop against **DROUTH** Our experience in 1910 and 1911 has proved that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 had a crop in 1911.

Don't Take Any Risks for 1912

Campbell's publications explain the system.

Campbell's Scientific Farmer	**$1.00**
Campbell's Soil Culture Manual	**$2.50**
Combination Price	**$3.00**

Address,
Campbell's Soil Culture Co., Lincoln, Neb.

When you write ask about the **Campbell Correspondence School.** 8Atf

TEXAS HEADQUARTERS

Root's Supplies for Bee-Keepers.

Makers of Weed New Process Comb Foundation.

Buy Honey and Beeswax.

Catalogs Free.

Toepperwein & Mayfield Co.
Cor. Nolan & Cherry Sts.,
4Atf **San Antonio, Texas.**

Mexico as a Bee-Country

B. A. Hadsell, one of the most experienced and largest bee-keepers in the world—has made six trips to Mexico, investigating that place as a bee-country, and is so infatuated with it that he is closing out his bees in Arizona. He has been to great expense in getting up a finely illustrated 32-page booklet, describing the tropics of Mexico as a Bee-Man's Paradise, which is also superior as a farming, stock-raising and fruit country. Where mercury ranges between 55 and 98 Frost and sun-stroke is unknown. Also a great health resort. He will mail this book FREE by addressing. 7A12t

B. A. Hadsell, Lititz, Pa.

Please mention Am. Bee Journal when writing.

Early (FROFALCON) Queens
"ITALIANS"

February and March deliveries—for Untested, $1.50 each; April, $1.25. Tested Queens, 50 cts. additional; Select Tested, $1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,
257-9 Market St., **San Francisco, Cal.**
Or Berkeley, Cal.

Please mention Am. Bee Journal when writing.

COST SALE

Of **BEE-KEEPERS' SUPPLIES for the next 4 months.** Too big Stock to carry over. Write your wants; I will make price to suit. Sept. 26, 1911.

W. D. Soper, 323 and 325 Park Ave. **Jackson, Mich.**

Please mention Am. Bee Journal when writing.

SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by

Colorado Honey-Producers' Association,
DENVER, COLO.

Please mention Am. Bee Journal when writing.

For Sale—15 Eggs $1.00

Indian Runner Ducks—White and Fawn.
2-3 **J. F. Michaal, Rt. 1, Winchester, Ind.**

Please mention Am. Bee Journal when writing.

HONEY AND BEESWAX

CHICAGO, Jan. 31.—Honey is not selling with the freedom we would like, still there is some going all the time, and stocks are working down. We continue to get 17@18c per pound for the fancy grades of white comb, with the undergrades selling at a discount of 1@5c per pound from the above prices. Extracted is quite plentiful with an easy market, prices ranging on white from 8@9c per pound, amber 7@8c per pound. Beeswax 30@32c. R. A. BURNETT & CO.

CINCINNATI, Feb. 1.—The market on comb honey has fallen off somewhat, only demand for fancy white selling in retail way at $4.00 per case; and jobbers at $3.60@$3.75, according to quantity. Extra white extracted in 60-lb. cans at 10c; light amber in 60-lb. cans at 8½c; amber in barrels, 7@7½c. Beeswax in fair demand at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

INDIANAPOLIS, Feb. 2.—Demand is good for best grades of honey. White comb sells for 18c in 10-case lots, finding prompt and ready sales. Amber grades in slow demand with lower prices. Extracted seems to be plentiful, and is selling at 11@12c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 31c.
WALTER S. POUDER.

DENVER, Feb. 2.—Supply of strictly white comb honey is about exhausted, and prices as a consequence are higher than they otherwise would be, as the demand is light. We quote No. 1 white comb honey, per case of 24 sections, $3.60; No. 1 light amber, $3.35; No. 2, $3.15. White extracted, per pound, 9c; light amber, 8c; strained, 6¾@7½c. For clean yellow beeswax we pay 26c cash, or 28c in trade, delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

SAN FRANCISCO, Feb. 1.—The demand for honey the past month has been more marked, and there is still a lot unsold. Comb honey, 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6½c. Beeswax, 27½@30c per pound for light in color, and 23@26c for dark. J. C. FROHLIGER.

CINCINNATI, Jan 31.—The demand for honey is rather good, considering the great quantity that is still in the West unsold. We continue to sell fancy comb at $3.75 to $4.00 a case; fancy extracted honey at 9@11c a pound, according to the quantity and quality purchased; while for amber extracted in barrels we are getting from 6½@7½c a pound. We are paying 30c a pound delivered here for choice, bright yellow beeswax absolutely free from dirt. THE FRED W. MUTH CO.

NEW YORK, Feb. 1.—Comb honey is well cleaned up, and prices are well sustained for what little odd lots are coming in. As to extracted, the market is weakening, and prices are gradually declining. Strictly fancy clover, California white and water-white sage hold their own fairly well, on account of not much stock being around. There are large supplies of all other grades, such as alfalfa, amber, light-amber and white, etc., and prices show a decided downward tendency. In fact, in large quantities quotation prices will have to be shaded in order to effect sale. We quote nominally Alfalfa, 6½@7½c per pound, according to quality; California white sage at from 8½@9c per pound; water-white at from 9½@10c, white clover at from 9@10c; buckwheat at from 6½@7c. Beeswax steady at from 30@31c.
HILDRETH & SEGELKEN.

KANSAS CITY, MO., Feb. 1.—Receipts and demand light. We quote: No 1 white comb, 24-section cases, $3.25; No. 2, $3.00; No. 1 amber, $3.00; No. 2, $2.75. Extracted, white, per pound, 9c; amber, 8c; dark, 5½c. Beeswax, 25@28c. C. C. CLEMONS PRODUCE CO.

BOSTON, Feb. 1.—Fancy white comb, 17@18c; light amber, 15c; amber, 11c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. BLAKE,-LEE CO.

"Southern Bee-Culture" is the name of a booklet written by J. J. Wilder, perhaps the most extensive bee-keeper and honey-producer in the whole State of Georgia. It is a real hand-book of Southern bee-keeping, with methods so simply described that they are easy to carry out. Every bee-keeper, especially in the South, should have a copy of Mr. Wilder's booklet. He conducts apiaries by the dozen, and produces many tons of honey every season. He tells in careful detail just how he does it. The price of this booklet is 50 cents, or we now club it with the American Bee Journal for a year—both for $1.30. Send all orders to the American Bee Journal, 117 North Jefferson St., Chicago, Ill.

What You Get at
CINCINNATI

Some things in addition to service, prompt and satisfactory shipments, and a real desire to please you, that come from the central point of distribution.

Root's Supplies—new and clean, and of the finest quality. New hives, new foundation, new sections—everything fresh from the factory in carload shipments.

Early-Order Discounts for Cash:—Three percent for January: two percent for February—a worth-while saving to which you are entitled. Don't fail to get in your order at once.

Saving on Freight or Express—By buying here, part of the cost of shipment is borne by us. You pay only from Cincinnati. This is quite an item on large orders, and our patrons are coming to appreciate it more and more.

Just bear these facts in mind, and begin the New Year right by ordering your season's supplies from

C. H. W. Weber & Co.

2146 Central Ave. CINCINNATI, OHIO

"Falcon" FOUNDATION

PROCESS OF MANUFACTURE.—The very best grades of beeswax, clarified without that acid taste or odor which is so obectionable in some makes, sheeted by our heavy pressure process, reduced and polished by smoothrolls, allowed ample time to cure, is finally passed through embossed power mills, resulting in that cear, absolutely pure product, **FAMOUS THE WORLD OVER, "FALCON" FOUNDATION.** No detail, from the buying of the beeswax to the packing of the product, is slighted. The care and skill in cleansing, the absolute purity from all foreign matter, the enormous pressure in sheeting into continuous belt-like sheets, the transparency and perfectness of the finished product, with the appearance and smell of the hive itself (for it is indeed the product of the bees, purified, embossed and returned for their use), has made a product, **"FALCON" FOUNDATION,** which has been chosen by the bees themselves as the acme of foundations. The **"FALCON" WAY** is **OUR WAY** developed in thirty years of foundation manufacture.

QUALITY

"FALCON" FOUNDATION made by our sepecial methods has won a reputation on account of its perfect cell formation, non-stretching qualities, and the readiness with which bees begin work upon it. Our section foundation is perfectly clear, and with it is produced those pearly white sections of honey so much admired. Our brood foundation is particularly adapted for full sheets in brood or extracting frames. Its strength eliminates all stretched cells in which drone-brood is reared or elongated cells in which no eggs at all are laid. Use **"FALCON" FOUNDATION** and satisfy your bees.

SAMPLES

WE GUARANTEE every sheet equal to samples in every particular. Drop us a card for samples and they will be sent postpaid.

Get **"FALCON" FOUNDATION** of our nearest dealers. If you don't know the names drop us a postal.

W. T. Falconer Mfg. Company

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

W. T. Falconer Mfg. Co.
117 North Jefferson Street, Chicago, Illinois.

You Want a Home

WHERE pure water is plentiful, comes when you wish, and stays when you will;

WHERE cyclones are unknown, and blizzards impossible;

WHERE crops never fail from drouth, and the unhoused harvest is never damaged by storms;

WHERE your stock can feed and fatten on pastures that are always green; and you can work in your fields with profit and pleasure every day in the year—except Sunday;

WHERE you can grow to perfection all the pleasant fruits, and all else that can contribute to make your home a paradise;

WHERE you can raise two crops of some things (on the same ground the same season), and continuous crops of other things, giving you "a money harvest" to sell every week in the year;

WHERE "sunny days" cover two-thirds the time, and yet sunstroke or "death or damage from heat" are unknown;

WHERE bees banquet in fields of never-fading flowers, securing rich stores of honey—which they do not consume "in wintry hours;"

WHERE you can grow practically all the nuts and fruits of commerce to perfection and in enormous quantities. Remember that Apricots, Almonds, Raisins, Figs. Olives and **Washington Navel Oranges** can not be grown in commercial quantities anywhere in the United States outside of California. Hence, a good price is assured, and over-production impossible.

YOU WANT A FAIRY FARM

WHERE you can (with the help of your boys) take the best care of it—thus forever ending the torturing ghost of "hired help;"

WHERE "your boys" will get rich on berry-patches, and "the women-folks" with poultry—as a by-product;

WHERE you can get more net cash every year from ten acres than can be wrested from a quarter section of the best farm land in the Mississippi Valley, and all this while escaping the lonesome isolation and dreary drudgery inseparable from the larger farming.

You want to know all about this wonderful land. You can secure full and accurate information by writing to

Col. E. S. WEEDEN, OROVILLE, CALIF.

Stating you saw this advertisement in the American Bee Journal. Reference—Editor American Bee Journal.

March, 1912 Volume LII. No. 3

AMERICAN BEE JOURNAL

The Oldest Bee-Paper in America

MAR 16 1912
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Apiary of Mr. K. Kanda, of Japan.

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Apiary of Mr. H. H. Moe, of Wisconsin.

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J.G. FRANK-MANG R.
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BEES WAX

Bee and Honey Display of The Golden Apiary, of Kansas, Mr. J. C. Frank, Manager.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
117 N. Jefferson Street, Chicago, Ill.

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America (except in Chicago, where it is $1.25), and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec11" on your label shows that it is paid to the end of December, 1911.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 4 lines accepted.

DISCOUNTS:

3 times 14c a line	9 times 11c a line
6 " 12c	12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 6th of each month.

(Organized 1870.)

National Bee-Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

Officers

President—George W. York, Chicago, Ill.
Vice-Pres.—Morley Pettit, Guelph, Ont. Can.
Secretary—E. B. Tyrrell, Detroit, Mich.
Treasurer—N. E. France, Platteville, Wis.

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Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.

Send Dues to the Secretary, E. B. Tyrrell.

Can't Do Without the Bee Journal.

MESSRS. GEORGE W. YORK & CO.

Gentlemen:—Enclosed you will find my renewal for another year to the "Old Reliable." I simply cannot do without your paper, and I believe if I could not get it I would certainly have to give up keeping bees, so closely is it linked with my bee-keeping life. You can certainly count on me for life, as I get more pleasure and profit out of a single number of your paper than a whole year costs.

WALTER E. ATKINSON.
Baltimore Co., Md., Sept. 14, 1910.

Queens That "Are Better"—Italians & Banat

Untested Queens, 75c each; $8.00 per doz.; two or more doz. in one order, $7.50 per doz. Breeder Queens, $3.00 each. Foreign trade add 5c each extra.

⅛-lb. Packages of Bees after May 1st, $2.00. Select queen wanted and add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-Frame Nuclei, with Untested Queen, $2.00 each; 2-fr., $3.00; 3-fr., $4.00. Full Colony of Bees in 10-fr. hive, $7.00. Add 50c if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For 10 or more Colonies or Nuclei, deduct 25c each.

I have successfully shipped Bees and Queens from this place every month of the year. I started two colonies Jan. 25th on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at The Cotton Palace, in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are Cash with order. I refer you to Sabinal National Bank or any businee firm in Sabinal.

I have seven yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Uvalde, Texas.

Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.**, and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.**, near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.**, and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG

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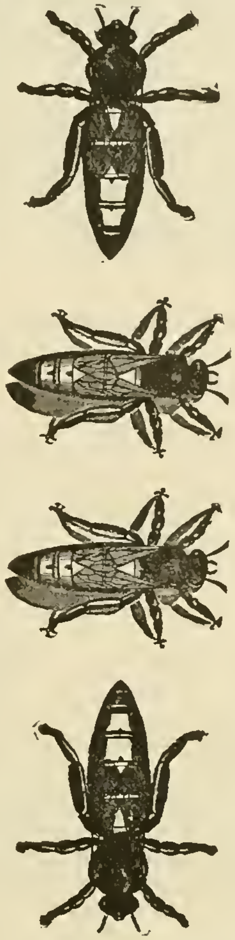

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Ontario, Canada July 22 CHAS. MITCHELL

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Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

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AMERICAN
BEE JOURNAL
L. L. LANGSTROTH
CHAS. DADANT

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CHICAGO, ILL., MARCH, 1912

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EDITORIAL COMMENTS

How Sweet is Honey?

How does it compare with granulated sugar in sweetness? In cookery, how much honey should be used to sweeten as much as a given amount of sugar? Some say less honey than sugar is needed in cooking, but perhaps the majority say that more than a pound of honey must be used in place of a pound of sugar.

In order to have something definite and authoritative, the question was submitted to Dr. H. W. Wiley, the United States Government chemist—the man who has done so much in the interest of pure food, and who is loved for the enemies he has made. Here is the reply:

> A comparison of sweetness of two dissimilar products is mostly a question of individual taste. The sugars present in honey are dextrose and levulose, which are the inversion products of sucrose. The sugar present in ordinary white sugar is sucrose. There are claims made by many that this mixture of dextrose and levulose is sweeter than sucrose while others offer the reverse view. Honey, besides having the sweetening properties of sugar, has a characteristic taste obtained from the flowers on which the bees have fed. So, from this, it would be hard to say which is the sweeter, and how much sweeter.
>
> Respectfully,
> H. W. WILEY, *Chief.*

And there you are. It seems, however, that we hardly need to give up the problem without some effort to solve it. Suppose a cake or other product of the culinary art be prepared with a given weight of sugar in it. Now make another exactly like the first in every respect except that instead of the sugar the same weight of honey be used. Now let some one supposed to be possessed of normal taste, blindfolded if you like, be allowed to taste each one a number of times without knowing which one he was tasting. If he uniformly says that the same one is sweeter each time, it will be pretty well settled that that particular one is sweeter than the other—at least to him. Then if the same test be made with a number of other persons, including persons of different tastes, if there is entire agreement, the question may be fairly settled whether a pound of sugar or a pound of honey will go the farther in cooking. If there is no such agreement, then the failure of solution must be charged up to differences of tastes, for which the old saw says there is no accounting.

If there is a decided difference one way or the other, continuous experimenting ought to bring out a fairly definite answer to the question, "How much honey is equivalent to a pound of granulated sugar in cooking?"

Statistics of Bees in United States

The enumeration of bees in the United States' Census of 1910, is not very satisfying, since it gives only the bees on farms, omitting those kept in towns and cities. Even so it is not without interest. Compared with 1900, there is a falling off in the number of farms reporting bees, and also in the number of colonies. On the other hand, there is an increase in the valuation.

The number of farms in the United States reporting bees were—in 1900, 707,315; in 1910, 590,907—a decrease of 116,408, or a loss of 16½ percent.

Number of colonies in 1900, 4,258,239; in 1910, 3,462,520—a decrease of 795,719, or 18.7 percent.

Here are 5 States with the percent of decrease from 1900 to 1910:

Alabama	34	Ohio	35
Tennessee	36	Delaware	37
Texas	39		

There were 16 States having an increase of colonies. The following are given with an exceptionally large percent of increase:

Nevada	48	California	55
New Mexico	63	N. Dakota	77
Dist. Columbia	155	S. Dakota	218
Montana	250	Wyoming	350

Plainly a colony of bees was considered of more value in 1910 than in 1900, for notwithstanding the decrease in numbers the total valuation increased from $10,179,839 in 1900, to $10,372,976 in 1910. The average value of a colony in 1900 was $2.39, increasing to $3.00 in 1910.

A great variation occurs as to the value in different States. Some of the highest and lowest in 1910 are: Georgia, $1.43; Alabama, $1.58; Montana, $5.09; District of Columbia, $5.23; Maine, $5.32; Massachusetts, $5.32; Nevada, $5.77; North Dakota, $6.23.

Notwithstanding the fact that the decrease in number of colonies has been greater in Texas than in any other State, Texas still holds the distinction of having a larger number of colonies than any other State, with its 238,107 colonies. Two other States have to their credit more than 200,000 each—Missouri, 203,560, and California, 200,718. Then there is a drop to 188,998, credited to North Carolina:

In 5 States the bees are valued at more than $500,000. They are:

California	$728,000	Texas	$675,000
New York	647,000	Missouri	585,000
Iowa	517,300		

Is there anything in these figures to help answer the question: Which is the best honey-State? A State with good pasturage for bees is likely to attract more bee-keepers than one with poor pasturage, and so to contain more bees. So, other things being equal, the State with more bees is the better honey-State. But if pasturage be equally good in two States, and one State twice as large as the other, the larger State will pretty surely have the larger number of colonies. So size must be taken into consideration. Perhaps we may approach what we are trying to reach by finding out the number of colonies in a given area in each State. At any rate, it will do no harm to classify the States in that way.

Instead of learning the number of colonies to the square mile in each State, suppose we plant apiaries all over each State, placing the apiaries a trifle more than 3 miles apart, thus allowing 10 square miles to each apiary, and then find out the number of colonies in each apiary. The State with the largest number of colonies in each apiary will head the list, and then we will go on down until we reach the State with the smallest number. That gives us the following table:

1.	W. Virginia	44.66	26.	California	13.24
2.	Kentucky	37.87	27.	Vermont	10.68
3.	No. Carolina	36.17	27.	Rhode Island	10.13
4.	Tennessee	34.36	29.	Kansas	8.98
5.	New York	31.80	30.	Mass	8.97
6.	Delaware	31.27	31.	Colorado	6.87
7.	Missouri	29.28	32.	Minnesota	6.79
8.	Iowa	28.56	33.	Florida	6.63
9.	Pennsylvania	27.61	34.	Louisiana	6.07
10.	Illinois	27.51	35.	Nebraska	5.89
11.	Georgia	26.39	36.	N. Hampshire	4.99
12.	Alabama	25 68	37.	Oklahoma	4.97
13.	S. Carolina	24.67	38.	Oregon	4.92
14.	Virginia	24.50	39.	Washington	4.90
15.	Ohio	23.93	40.	Utah	3.08
16.	Indiana	22.27	41.	Idaho	2.94
17.	Dist. Col	21.57	42.	Maine	2.30
18.	Michigan	19.57	43.	Arizona	2.10
19.	Maryland	18.97	44.	S. Dakota	.84
20.	Connecticut	18.93	45.	New Mexico	.82
21.	Arkansas	17.22	46.	Nevada	.76
22.	Wisconsin	17.07	47.	Wyoming	.47
23.	Mississippi	15.88	48.	Montana	.43
24.	Texas	14.77	49.	N. Dakota	.07
25.	New Jersey	13.42		United States	11.44

Sealed Covers in Cellar in Winter

Editor Reidenbach, of Pfaelzer Bztg., is quoted in Maerkische Bztg. as saying concerning cellaring bees in America:

> "The covers are left glued, just as they were, so that the hive is tightly closed on top. That is just the greatest mistake. The cover must be pervious, so that the vitiated air may escape upward."

One wonders whether Editor Reidenbach can be familiar with wintering bees in cellar. As wintered outdoors in Germany, with a very small entrance, there might be trouble with sealed covers. But with the very large opportunity for the entrance and exit of air at the bottom of the hive, as generally allowed in cellars in this country, there is no trouble whatever about the escape of vitiated air at the bottom. At any rate, the very great success obtained in cellars with sealed covers, when all other conditions are favorable, outweighs all the theories that may be advanced against it.

Winter Stores of Bees

> If I have to feed, and have only a limited number of colonies to prepare, I would not feed until close to the time when we *may* have permanent cold weather. I would give a syrup made of 2¼ pounds of granulated sugar to one pound of water brought to a boil; and if I wanted to do what I felt sure would be the best, I would add a teaspoonful of tartaric acid to each gallon of syrup. There is then little need of evaporation by the bees, and they would store the syrup in the midst of the cluster No better stores can be provided for bees during winter confinement. In my estimation, if a bee-keeper has only an early surplus-honey flow, such as clover, his bees are really never in proper condition for best wintering without feeding; because if they have enough stores in the hive (which, as a rule, is not the case), it is not in the place where the bees can keep it in the best condition.—R. F. HOLTERMANN, in Gleanings in Bee Culture.

Will this belief and practise of Mr. Holtermann bear scrutiny? As a rule, he says there is not enough honey in the hive for winter stores where the bees get nothing later than clover. If there is enough gathered from clover to yield a surplus, why should not the bees store enough of it for winter? Do they not always look out for their own needs, carrying the honey into the supers only when there is no more room in the brood-chamber? Certainly; but how much room is there for winter stores in the brood-chamber while the clover flow is on? During that flow the queen is laying heavily, in many cases keeping the equivalent of 6 frames entirely filled with brood. Pollen enough to fill one frame is also present. In a 10-frame hive that leaves only 3 frames for honey, and in an 8-frame hive only a single frame. Honey enough may have been gathered, but it is in the surplus apartment. The instinct of the bee is not at fault; it has laid up enough for winter, but man has interfered and taken away as surplus the honey stored above, and now man must make up for that interference by feeding.

In case there should be enough clover honey in the brood-chamber for winter, it will be in the outside frames and at the upper part of the others. After the close of the harvest the bees have plenty of time to empty the honey from the outer frames and store it centrally. Evidently Mr. Holtermann does not feel he can trust them to do that, and possibly he is right, for the bees are slow to unseal honey and move it to a different place, except in sufficient quantity to supply their needs for a short time ahead.

Where there is a later flow the case is quite different. Gradually the brood-rearing diminishes, and the honey is stored more and more centrally, right where it is best to have it.

Uncapping Combs for Extracting

The Australasian Bee-Keeper has a symposium upon this subect. There is a general agreement in emphasizing the importance of having the uncapping-knife sharp. There is difference of opinion as to having the knife hot or cold, with a preponderance of opinion in favor of the hot knife. A. P. Young takes this philosophical view:

> For the beginner, a hot knife is undoubtedly the best, as it facilitates considerably the process of uncapping, as any one who has tried both ways can testify. But for the expert the questior arises: Is it worth the trouble? If all the appliances available for heating of the knives are a stove and a vessel of hot water, then I should say use a cold knife and maintain a keen edge. On the other hand, however, if one has means for heating knives with a modicum of trouble and expense, under these circumstances it would pay to heat the knife. A bee-keeper then must judge by his own circumstances which is the best plan, and allow others the same privilege.

One writer says: "I notice in the American bee-papers that the knife which is heated by steam is discarded." Is it?

For shallow combs J. F. Munday uses a straight butcher-knife, and a down stroke. Otherwise a curved knife with an up stroke. He very strongly favors a thick handle and a narrow blade, as a thin handle or a wide blade requires much more strength. Among the others there is a difference of practise as to using the down or the up stroke.

Swarming Problem Among Bees

There seems to be a strong feeling in the minds of many that it is idle to try to breed toward a strain of bees with a diminished tendency toward swarming. Indeed, it may not be too strong an expression to say that some are bitterly opposed to having anything said that favors the attempt to work toward a non-swarming strain. Now is there anything really wicked in trying to produce non-swarmers? Even if such a thing be never attained, where is the great harm in trying for it? Why is it so much worse to advocate non-swarming bees than to advocate non-sitting hens? Once there were no non-sitters, but careful breeding brought them? Why not make the same attempt for non-swarmers?

It is not fair to insist that non-swarming bees must be those that never swarm under any circumstances. Non-sitting hens sit—sometimes. If we can breed out the swarming habit as nearly as the sitting habit has been bred out, will it not be worth while?

In view of the general tendency to decry any advocacy of non-swarming bees, it is refreshing to find in the Irish Bee Journal an article by G. W. Bullamore, in which he closes by saying:

> But I can see that some strains of bees are less sensitive to the conditions which produce the desire to swarm, and also that, in matters of heredity, bees are no exception to the rest of creation.
>
> And that is why I think that careful breeding is the only true method of dealing with the problem of excessive swarming.

In the course of his article Mr. Bullamore says:

> Another statement is that a swarm will not issue if the colony is headed by a queen of the current year. Dr. Miller says that he tried this, and that it did not answer. He thinks, however, that the rule given by Gravenhorst may be correct. According to Gravenhorst, a colony will not swarm with a queen of the current year if it is a queen of their own rearing.
>
> But, unfortunately for this rule, Dr. Dzierzon tells us that the strain of bees in the heath districts of Germany invariably rear drones from a queen of the current year, and not infrequently sends out a swarm led by such a queen. The method of management has exterminated the non-swarming bees, and has favored excessive swarmers.

It seems that I did not make myself entirely understood. Let me go somewhat into particulars.

It is probably generally agreed that the age of the queen is quite an important factor in the swarming problem. Under certain conditions a 3-year-old queen will swarm when under precisely the same conditions a 2-year-old queen will not swarm. It is also known that some races of bees are more given to swarming than others. This being the case, it is not hard to believe that Gravenhorst may have had bees so little inclined to swarm that no swarms would issue with a queen until she had wintered over one winter, while Dzierzon would find it different with heath-bees, which are great swarmers.

But another very important factor appears in the case, and that is the condition of the colony into which the young queen is introduced. It had been that it was the rule that a queen would not swarm during the same season in which she was born. There were those, I think, who had found no exception to that rule. Taking the rule as one that admitted no exceptions, I said to myself, "Now all I have to do is to introduce into each colony a queen only a few days old, and then good-by to the swarming trouble." So about the time colonies were thinking of swarming I introduced a number of young queens, and then it was that I found "it did not answer," for there was swarming galore. One special case may be mentioned. I am not sure now whether the colony was just on the point of swarming or had swarmed and returned. At any rate I said, "I'll fix you. I'll give you a queen that has just begun laying, and then you can't swarm." I gave the young queen, and the colony was all right for, I think, 2 days. Then it swarmed, and the queen hadn't been yet laying a week! So you see the rule doesn't work *if the colony already has the swarming fever.*

But the rule is—and I value the rule greatly—that if a young queen be given to a colony which has not the swarming fever, that colony will not swarm that same season. With a strain of bees greatly given to swarming, there might be so many exceptions as to make the rule worthless. I can imagine a strain of bees so little given to swarming that there would be no exceptions. I *think* there were never any exceptions with me except one year, and then there were 2 or 3 exceptions

But how may we know in any case that no swarming fever is present? I don't know that I can answer that, but I think that it is pretty safe to say that when a colony has been queenless a week or 10 days, with all queen-cells destroyed, there will be no immediate danger of swarming if a laying queen be introduced. After a month or so there may or may not be swarming if the queen be more than a year old.

Just how far it will answer may be understood if I tell what is the practise here. Queens being clipped, it is not hard to tell whether there has been a change of queens. Each colony is examined before there is any danger of swarming, all queens with whole wings are clipped, and if at any future examination a laying queen is found with whole wings, she is clipped, and in the record-book on the page for that colony is written the word "PASS," and no more attention is paid to that colony that season so far as swarming is concerned. That same word "PASS" is also written if we have given a young queen to a colony after it has been queenless a week or 10 days. To be sure, there is a bare possibility that a *passer* may swarm, but the occasion is so rare that it is not worth while to take it into account. C. C. M.

Help Get a U. S. Parcel Post

Practically every nation has a Parcel Post System. Exhaustive reports on Parcel Post Systems of all nations have been prepared under the direction of Jonathan Bourne, Chairman of the Senate Committee on Post-Offices and Post Roads, 1911, showing that our country is away behind in this matter. From the data we learn that the United States has the lowest weight-limit for parcels carried by mail, and the highest charge per pound of any country in the list. Our Goverment makes a flat charge of 16 cents per pound for anything carried by Parcel Post, and limits the package to 4 pounds in weight.

Russia will carry packages up to 120 pounds, charging 13 cents for 2 pounds and 23 cents for 7 pounds. China, with a territory nearly one-half larger than ours, carries 4 pounds for 30 cents, and 22 pounds in one package for a dollar. To mail 22 pounds in our country we would have to put the material in six packages and pay $3.52 postage.

Germany has the zone system, by which charges vary according to distance and weight. That country will carry an 11-pound parcel 10 miles for 6 cents, and to any post-office in the empire for 12 cents.

More than a score of other nations could be added, but enough has been given to show how antiquated our postal system is in the matter of transporting parcels for the people.

Recently, W. A. Henry, Emeritus Professor of Agriculture, in the University of Wisconsin, Madison, spent some time in Washington attending hearings on Parcel Post held by the Senate Committee referred to above. He soon found that powerful interests, well organized, were opposing a General Parcel Post System by every possible means, especially by flooding Congress with petitions in opposition and by urging one-cent letter postage. Do you want from the present Congress a General Parcel Post System such as all other civilized people enjoy? Then spend 6 cents in saying so by letters to your two senators and your representative.

March 18, 1912, has been set apart as Farmers' Parcel Post Letter Day—a day on which farmers all over our land are to write letters to their congressional representatives in Washington, asking for an up-to-date General Parcel Post such as all other civilized countries enjoy—one not limited to rural routes alone. Gradually the American farmers are learning the value of co-operating and working together in a common cause. Here is a chance for the first nation-wide lesson in teamwork by farmers, all acting together as one man for the common good.

Do not expect your congressmen to vote for a Parcel Post when they are all the time hearing from the opposition and not a word from *you*. Petitions are the lazy man's way of discharging the duties of citizenship. Write three letters and get your neighbors to write, and be sure to oppose one-cent letter postage until we have a General Parcel Post.

Join with the other farmers all over the land in again writing letters to your congressmen. Ask for a General Parcel Post, and not one limited to rural routes. Only by co-operation and timely effort can the friends of Parcel Post win their cause.

Take down your calendar, Mr. Bee-Keeper, and draw a circle around March 18, 1912—the *Farmers' Parcel Post Letter Day*. Get your neighbors to join in the movement, so that on March 18, 1912, from 4,000,000 rural mail-boxes there will be gathered letters and postal cards which, pouring into Washington in a great flood, shall convince the members of Congress that at least the American farmers and others are alive, and *in dead earnest* in their call for an up-to-date General Parcel Post.

We believe that the right kind of a Parcel Post in the United States would be a grand thing for the rural producing class. Yes, it would be a great benefit for *all* classes—both consumers and producers. Let us all unite, March 18th, and "go after" Parcel Post by simply overwhelming the members of Congress with urgent letters as suggested.

MISCELLANEOUS NEWS ITEMS

The Wisconsin Convention.—The annual meeting of the Wisconsin State Bee-Keepers' Association was held at Madison, Feb. 20 and 21, 1912. It was our pleasure to be present. Mr. C. P. Dadant came to Chicago and went with us. We had a delightful round-trip together. There were about 30 bee-keepers present, a number of them being the best convention men in the ranks, such as Messrs. France, Wilcox, Huffman, Dittmer, Ochsner, Allen, Lathrop, and others.

Lloyd France, a son of N. E. France, who is attending the Wisconsin College of Agriculture at Madison, was also present, and gave an interesting address on what the various agricultural colleges of America are doing (and not doing) for bee-keeping. He also said that he thought the time was ripe for the installation of an experiment apiary at the college where he is studying. Prof. Sanders, the State Entomologist, is deeply interested in the subject, and is giving every encouragement to the plan, which we have no doubt will be put into effect the coming spring.

"Lloyd" is a veritable "chip of the old block," and gives promise of doing most excellent work for the advancement of bee-culture. Having the advantage of not only his own bee-experience, but also that of his father's, gives him a splendid beginning, which, if followed up with his characteristic thoroughness and efficiency, will make him one of the leaders of apiculture in a very few years.

The Wisconsin Bee-Keepers' Association voted to continue its affiliation with the National Association, which now makes it one of the branches as provided by the new National Constitution. We were glad to see this action passed with such evident unanimity. We believe that the Wisconsin Association was the first to join the National as a body, many years ago, and has always continued its close relationship.

Mr. N. E. France, treasurer of the National Association, who has done so much for the bee-keepers and bee-keeping of the United States, being relieved of much of the burdensome work he has carried so many years for the National, is planning to devote himself more extensively than ever to his be-keeping business. If a large section of country is not sweetened with his honey during the coming season, and those that are to follow, it will not be his fault. He is still the inspector of apiaries for Wisconsin, and doubtless is the best informed bee-keeper in this country on bee-diseases. Mr. France has earned a place in American bee-keeping that will always command the highest respect and honor of all bee-keepers everywhere.

The officers elected for the ensuing year are as follows: President, Jacob Huffman; Vice-President, F. Wilcox; Secretary, Gus Dittmer, of Augusta; and Treasurer, A. C. Allen. Delegate to the National convention, A. C. Allen; alternate, Harry Lathrop.

We expect to publish a brief report of the Wisconsin convention in the near future. There were some most excellent papers read, and the secretary, Mr. Gus Dittmer, knows how to boil down the discussions and give the real cream.

◆

European Foul Brood in Honey.—This question was asked in Gleanings in Bee Culture and referred to Dr. E. F. Phillips for answer. He replies:

> The question raised is, of course, important; but I know of no way to answer it definitely. The cause of European foul brood is not known, and therefore we would not know what to look for in the honey. Furthermore, even for American foul brood (which we know is carried in honey) it is difficult to find the organisms. Some practical experiences would certainly indicate that European foul brood is carried in honey; but, on the other hand, the success which is sometimes experienced with the dequeening method of treatment makes this somewhat questionable. Every phase of this disease is a puzzle, and one who can speak definitely of it usually does not know.

◆

No More Bees In Imperial.—The Imperial county board of supervisors, at its last meeting passed an ordinance for the protection of the bee-industry of that county. During the winter over 1300 colonies were shipped in, making a total of nearly 11,800 in the county, an increase of 5000 over last year. Basing the estimate on last year's losses, this spring should find 10,000 there. Owing to the Government report of the presence of American and European foul brood in other counties, no more bees will be permitted to be brought into that county. So says A. F. Wagner, Inspector of Apiaries of Imperial County, California.

◆

The G. B. Lewis Co., of Watertown, Wis., are pushing things along in the bee-supply manufacturing line as arduously as ever, if not more so. On the return trip from attending the Wisconsin convention Feb. 21st, Mr. C. P. Dadant and the writer stopped off at Watertown between two trains in order to call on the Lewis Company. Mr. Geo. C. Lewis, the president and treasurer, was in his office, also Mr. L. W. Parks, the affable and thorough-going superintendent of the factory, and Mr. G. E. Bacon, the sales manager, were "on their jobs."

The Lewis Company have certainly done wonders in rebuilding their factory since the fire which destroyed it a few years ago. They purchased a 5-acre tract along the railroad line, and have almost covered the whole of it with buildings, lumber yards, etc. They have about a half-mile of railroad track of their own. They are in a position to turn out their famous "Beeware" for the whole world of bee-keepers, or as many of them as want to use it. The G. B. Lewis Company are now in their 38th year of successful manufacture of bee-keepers' supplies, and merit their large success.

◆

"Forty Inches and a Bee."—Hon. Eugene Secor, of Forest City, Iowa, found the following couplets in the Live Stock World, of Chicago, and sent them in, saying, "'Tis *intensive farming* intensified:"

"They used to have a farming rule
Of forty acres and a mule.

"Results were won by later men
With forty square feet and a hen.

"And nowadays success we see
With forty inches and a bee."

◆

"Goddess of Plenty" in Honey.—At the Panama-Pacific International Exposition of 1915, at San Francisco, Calif., will undoubtedly be many novel and unique exhibits. One of the latest ideas comes from San Mateo Co., Calif. Christian Stader proposes to erect a statue of the "Goddess of Plenty" made of honey. Mr. Stader is a bee-keeper, and expects to have the bees build the statue, and offers to stand it up in space allotted to Santa Clara county for its exhibit. This would be an unusual exhibit and attract considerable attention, especially on the part of bee-keepers.

◆

"Carbonal" for Robber-Bees.—We have received the following from Massachusetts, referring to the stopping of robbing among bees with carbolic acid:

> I noticed in the January American Bee Journal, an article on page 6, headed, "Carbolic Acid in the Apiary." For the benefit of my fellow bee-keepers, I would like to give the following:
>
> One day last summer, Mr. O. F. Fuller noticed some bees robbing. He at once commenced looking for something to prevent or stop them, and noticing on a table in his house a sample bottle of "Carbonal"—a disinfectant—he put some in water and sprayed the front of the hives, where the bees were robbing. The trouble was soon over, and everything quiet within a very few minutes.
>
> Since Mr. Fuller told me of his experience I have tried it, and have always had most gratifying results, and would not be without it. FRANK M. KEITH.

We suppose "carbonal" can be secured at any drug-store. We hope others will try it the coming season and send in reports for publication.

◆

The National and California.—We have received the following letter from Mr. Sebastian Iselin, of California, referring to the action of the California State Bee-Keepers' Association:

> EDITOR AMERICAN BEE JOURNAL:—
>
> I am enclosing a clipping from a local newspaper's editorial on the withdrawal of the California Bee-Keepers' Association from the National Bee-Keepers' Association. Personally, I regret this action very much, because it seems to me, if at all, it ought to have been taken *before* the new Constitution was adopted by the National, and not just now, at the time when a new order of things is about to take place; and the officers ought to be encouraged in every possible way.
>
> Let us hope that the National will soon prove that the change voted upon last fall was of such importance that the California Association may see its mistake, and return into the ranks of the National Association.
>
> SEBASTIAN ISELIN.
>
> Stockton, Calif., Feb 12.

The clipping referred to by Mr. Iselin reads as follows:

> BEE-KEEPERS SET AN EXAMPLE.
>
> The withdrawal of the bee-keepers of California from the National Association on the ground that they received absolutely no benefits, and, on the other hand, found it a source of expense, taking funds which otherwise could be very profitably used in their local affairs, ought to serve as an eye-opener to many other organizations in the State affiliated with National bodies. There are hundreds of National bodies having no more excuse for their existence than the fact that there is just so much loose coin in the country, and that they might as well have a share of it for their own ends. It would be well to ponder long over affiliating with National bodies. Ordinarily State organizations can accomplish as much as more pretentious ones, by reason of the fact that they can concentrate their whole force on their own immediate territorial needs, and avoid the handicap which too often goes with the efforts of vast bodies with varying ends to serve.

We are quite surprised at the action of the California State Bee-Keepers' Association. We believe at one time there were more members of the National Association in California than in any other State. If all the State Associations were to imitate California in its recent move, there would soon be no National organization at all. We have been led to think that California was really the center of the co-operative organizations, and now for the California State Bee-Keepers' Association to withdraw from the National seems to be contrary to what we might reasonably expect from the bee-keepers of that State. It seems to us that they should stand loyally by the National Association, as should every other local organization of bee-keepers, in order to make the National of larger benefit to bee-keepers everywhere under its new Constitution than it has ever been before, although it has done some most excellent work in the over 40 years of its existence.

Of course, the National Association will go right on and do its best to merit the co-operation of bee-keepers everywhere. We join in the hope expressed by Mr. Iselin, that the "California Association will see its mistake and return into the ranks of the National."

◆

Bee-Disease in South Africa.—The "Isle of Wight" disease seems to baffle investigation, although it keeps on its deadly conrse. Now a new trouble seems to have broken out in South Africa, as reported in the South African Bee-Keepers' Journal. Combs contain thousands of dead larvæ, but careful analysis fails to show the presence of the usual culprits in infectious diseases. A sample of the defective brood was sent to our Dr. Phillips, who reports:

> "The sample of brood arrived in excellent condition, and in view of the importance to the bee-keepers of your country has been subjected to an examination much more careful than is usual for routine samples.
>
> The irregular appearance of the brood would indicate an abnormal condition, but the gross appearance and microscopic and bacteriological examinations all fail to show any evidence of either of the infectious diseases."

California Convention.—The Los Angeles Express, an evening newspaper published at Los Angeles, Calif., contained considerable reference to the meeting of the California State Bee-Keepers' Association in that city, Feb. 6th. It also had a large picture showing 8 of the members, including B. G. Burdick, the president of the Association, and also Delos Wood, one of the oldest bee-keepers in that State.

California bee-keepers are waking up on the organization question. They have some plans for the future, which we trust they will be able to carry out. That State is one of the best organized among its fruit-growers of any in the Union. If the bee-keepers are to make the largest success they must also organize. We hope, however, that all of the local organizations throughout that State will also become branches of the National Association, the new Constitution of the National now making provision for such procedure.

Bee-keepers throughout the country will doubtless watch with interest the progress made along organization lines among their brethren in California. We hope that the American Bee Journal will be kept informed concerning everything connected with the great things California bee-keepers are expecting to do.

◆

Cement-Coated Nails in Honey-Case Tops.—The C. C. Clemons Bee-Supply Co., who are also large dealers in honey, send us the following on the use of cement-coated nails to fasten the tops of honey shipping-cases:

> EDITOR AMERICAN BEE JOURNAL:—We want to call your attention to one thing which we think would be a good thing to advocate, and that is for honey-producers to stop using cement-coated nails in putting the *tops* on their honey-cases. These tops have to be removed in showing the honey, and where cement-coated nails are used, it splits them all to pieces, and when put back it makes a bad looking case, and sometimes a customer thinks this case has been refused because the top is broken. We notice that this is not the rule with all shippers, but about 85 percent of what honey we have received this year has been put up this way.
>
> C. C. CLEMONS BEE-SUPPLY CO.

This is indeed an important matter—one of the little things that means very much. We had noticed the same trouble. It is practically impossible to remove the top of a shipping-case without splitting it, when cement-coated nails have been used. It is all right to use such nails on all the rest of the case, but not when nailing on the top or cover after it is filled with honey. The same thing might also apply to boxes for 5-gallon cans.

We trust that all readers of the American Bee Journal who ship comb honey will remember this, and hereafter use plain nails instead of the cement-coated kind when nailing on the tops or covers of shipping-cases.

LATER.—Since putting the foregoing in type, we learn that the G. B. Lewis Co. put in a few plain wire nails for nailing on the covers. But it would be a good thing to have a printed slip accompanying the nails calling attention to it.

◆

The Northern Michigan Bee-Keepers' Association will hold its next annual meeting at Traverse City, Mich., March 13 and 14, 1912. Whiting Hotel will be the headquarters. Special rates have been arranged for, and also the Hotel's parlor on the second floor has been offered to us for the meetings. A good program will be provided, and we would like to see many new faces. If you are so you can come, better do so. We are sure you will have a pleasant time.

IRA D. BARTLETT, *Sec.*

East Jordan, Mich.

◆

The Worcester County (Mass.) Bee-Keepers' Association is perhaps the only organization of bee-keepers in America that meets monthly. They gather in Horticultural Hall, at Worcester, Mass., at 2 p.m. the second Saturday of each month except July and August. The secreary is O. F. Fuller, of Blackstone, Mass., who can furnish a copy of the program, and any other information desired in connection with the meetings of the organization.

◆

The Northern Texas Bee-Keepers' Association will hold its next convention at Greenville, Tex., Wednesday and Thursday, April 3 and 4, 1912. All bee-keepers are cordially invited to attend. We expect a great meeting.

W. H. WHITE, *Sec.*

Greenville, Tex.

◆

The South Dakota Bee-Keepers' Convention will be held in the Court House in Sioux Falls, S. Dakota, March 20 and 21, 1912. All bee-keepers are urged to be present.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Mrs. Margaret Wilson—An Aged Honey-Consuming Queen

Feb. 15, 1912, my mother—Mrs. Margaret Wilson—celebrated the 93d anniversary of her birth. And a lovely birthday she had. Such a shower of congratulations in the shape of cards, letters, and presents.

It is not given to many to be able to look back over 93 birthdays with a mind as clear, and a body as perfect as she possesses. She is very hard of hearing, and within a year her eyesight has failed so that she has not been able to read as formerly. She has always been a great reader, and since giving up active life she has spent many happy hours with her books, often reading a favorite over many times. It must be a trial not to be able to pick them up and read when she wants to; but never a murmur. Of course, we read them to her, but that is not the same as being able to read oneself. She is rarely idle, spending her time knitting, as that is all she can do now.

MRS. MARGARET WILSON.

She is not old in spirit, and takes the keenest interest in everything around her, and she is a great favorite and chum with her grand-children. Her children—well, it would be difficult to find words to tell how much they love her. With such a mother as an example, one feels there is much to live up to.

Strangers find it difficult to believe she is so old, always remarking on the freshness of her complexion, and the lack of wrinkles. One lady while visiting us sat looking at her for a while, and then said, "Why, if I could grow old as gracefully as that, I would never fear growing old."

She is the honey-eater of the family. Never gets tired of it. Just how much of her wonderful vitality is due to honey it is hard to tell, but I am sure it is good for her. This has been a very hard, cold winter, but she has never had even a cold.

EMMA M. WILSON.

["Mother" Wilson is also the friend of "ye editor." We have known her for over 20 years, and have often met her in Dr. Miller's delightful home, where she is one of the trio of "queens" that live so happily together there. We are glad to be able to present to our readers her picture, and also the accompanying sketch by Miss Wilson. The picture was taken only a few months ago, but is just as Mother Wilson looks today. May she live to be a hundred—"and then some."—G. W. Y.]

◆

Carbolic Acid to Clear a Super of Bees

Fashions prevail in the management of bees as well as in other things. In England it is the fashion to use cloths wet with a solution of carbolic acid for the purpose of driving bees down out of supers. In this country it is seldom mentioned. It is therefore a matter of no small surprise to learn that in this country there is a bee-keeper thoroughly familiar with the use of carbolic acid as a super-clearer, and who used it some time even before the bee-escape now in common use was known. That bee-keeper is a sister, and that sister none other than that experienced and practical bee-keeper, Miss Mathilde Candler. She writes:

> I have just read the editorial regarding the using of carbolic acid in the apiary, and as I used it when removing comb-honey supers from the hive, regularly and for a good many years before the advent of the Porter bee-escape, I may be able to give some testimony that might be of interest.
>
> I used it only in harvesting the honey. I poured a small quantity of acid—about a spoonful or so—into enough water to wring out 4 or 5 cloths probably about a gallon of water. If too much acid is used it burns the hands; if too little, its effect is not lasting, and bees will quickly return to the supers unless they can be pried loose and removed rapidly enough.
>
> After being wrung out, each cloth was spread out over a super under the cover. By the time the last cloth was on, the first super was cleared of bees, if the solution was strong enough, and could be removed.
>
> It works much more rapidly and sure than the escape; in fact, it is done in a minute, and there is no failure through stoppage of the escape-hole, as is sometimes the case with bee-escapes.
>
> But it has one defect, which caused me to abandon it, though I have sometimes thought of practicing that method again. A large amount of unsealed brood was lost by it. When I opened the hive I found the larvæ on the sides of the cell, at the edge, or even on the floor of the hive. Only an agony supreme could have induced that young brood, naturally inactive, to move about in this way. Possibly if I had used fewer cloths at a time, it would have worked better, as they would not have remained on so long.
>
> Cassville, Wis. MATHILDE CANDLER.

An objection to the use of carbolic acid in this way—perhaps urged only by those who have not tried it—is the danger of having the flavor or odor of honey affected thereby. As Miss Candler makes no mention of this, likely she had no trouble on that score. Strangely enough, the objection she does make has never been mentioned in the books and periodicals of England, if memory serves. Can it be possible that no British brother or sister has ever used a solution strong enough to kill the brood? Or, are they less careful observers across the water than our American sister?

We are much indebted to Miss Candler for her interesting and valuable communication, and it is just possible, considering how quickly and thoroughly the acid works, that we may learn just how strong to make the solution, and how long a time to allow the cloth to remain, so that it shall do its work effectively and yet not injure the brood. In that case it may yet become the vogue on this side the water.

◆

Wintering Caucasian Bees

> Arthur C. Miller says in Gleanings in Bee Culture, that the temperature outside the cluster inside the hive is the same in winter as that outside the hive. I thought of it when I went out to break the snow-crust in front of my hives, and found, as we always do, a large space or chamber in front of the entrances, where the warmth of the cluster in the hive had melted the snow outside. I think a raging blizzard would not affect those bees in the least. But our hives are not always covered out of sight with snow, especially in the spring when they are filling with brood and most need protection.
>
> It seems to me that Mr. Holtermann has given us something on wintering that is fully as valuable as Mr. Doolittle on queen-rearing, or Mr. Alexander on swarming and increase. Anyway, I have not been successful in cellar-wintering, and I know that many others have not, and his ideas appeal to me, There are one or two drawbacks, however, to Mr. Holtermann's plans. In the spring you will have to stand in the flight of the bees, either the swarm you are working with or its next neighbor. No doubt this is better than drifting. Then I see no way to carry on stimulative feeding when one desires, but perhaps with the extra warm bedroom and plenty of stores, it would not be so much needed.
>
> We hear so little about the Caucasians that it seems those who have tried them must have been disappointed and given them up. This was my experience. My chief trouble was, they would not enter the comb-honey super, and seemed bent on swarming, but they lived over winter and built up in the spring under conditions that no other bees would survive. The queen was received too late in the fall to build up a strong colony for winter, and they went into the cold weather with insufficient stores; also, the hive was not well protected.
>
> Along in March, perhaps two weeks before they had a flight, I opened the hive and poured a few tablespoonsful of warm sugar syrup right on the cluster. They were excited, yes! but it did not seem to hurt them, and they commenced to build up. I continued to feed them irregularly, and they soon went away ahead of any of my Italians. Later I reared a number of young queens, but afterwards requeened them all with Italians, because they would not store comb honey.
>
> Now I am going to try them again. We want early brood and young bees, but are always cautioned not to wear out the bees and run the risk of losing brood in a sudden cold snap by too early stimulating the bees to rear brood. Why could not an Italian and Caucasian queen be kept side by side in a Holtermann wintering-case on a Hand bottom-board, thus supplying early Caucasian bees to the Italian queen? No great harm done then if some of the old Italians did die with more than enough young bees to take their place.
>
> There is no denying that early brood and bees mean honey and money, even if stores are used. We know that the Italians are no good to rear brood in March or April, but it doesn't seem to injure the constitution or disposition of the Caucasians to get up early on a winter morning, light the fires and go to work.
>
> They will rear brood on short allowance if they must, but will make a good return for a full table. It costs no more stores to rear bees when you want them in early spring than when you don't want them after the honey-flow is over, As in a Holtermann wintering-case, you can not use the back entrance, a Porter bee-escape would have to be arranged at the front entrance of the Caucasian hive to shift the bees when they were wanted in the Italian hive. This could not be done except on some day when the bees were flying, but there are always such days in the last of March and in April. Brood-rearing in the Caucasian hive might be checked for a time, but there would be young bees to care for the brood, the hive being protected with the wintering case; and the Italians would certainly be the gainers. D. E. LIGHT.

Is it not just possible that conclusions may be drawn without sufficient data on which to base them? You say your chief trouble with Caucasians was that they would not enter the comb-honey super. If others have found the same objection it has escaped attention. It is just possible that there was something exceptional in your case, and that upon fuller trial you would find that Caucasians would take to supers as kindly as other bees. It would be of interest to know what inducements you offered in the way of baits to coax the bees into the supers. There is probably no race of bees that will be satisfactorily prompt at entering a section-super which has in it nothing beyond foundation. That is, for the first super. At least one bait-section should be in the first super; that is, a section that has been partly or wholly filled the previous season, and then the honey emptied out by the bees in the fall. If you gave such bait to your Caucasians, and they then refused to enter the super when other bees were doing work at surplus-storing, it remains to be learned whether Caucasians in general act in that way.

Again, you say Italians are no good to rear brood in March or April. That raises the question whether there may not have been something exceptional in your experience, for that objection to Italians has not been at all general. Certainly in this locality they build up early enough to do good work as surplus-gatherers.

We will all be interested to hear how you come out in your further experience.

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

The Blending of Honeys

As to the blending of honeys mentioned on page 48 by Mr. A. C. Miller, without taking the trouble to look up the matter, I can not recall the man spoken of who was doing such a rushing business in the Toronto markets. Without questioning the statement in the least, I would remind Mr. Miller that "one swallow does not make a summer," and even if one man does blend his honey, that is not proving it to be a good practise.

As a matter of fact, the term "blending" is almost a misnomer so far as Ontario honey is concerned, for, generally speaking, about all our white honey is from clover and basswood, while our dark honey is from buckwheat. Some years even our clover is a little *off* in color, and at such times we find we are "up against it" when it comes to selling it in a market where whiter honey is being offered. By this I mean that some localities will give whiter clover honey than others in some seasons. Generally speaking, the whiter the honey the better article it is, other things, such as body, etc., being equal in all samples. The public have learned this, and I do not blame them for wanting a white honey—indeed, I would prefer that grade myself if wanting any.

If I remember correctly, Mr. Miller said that the honey in his State varied very much in color, flavor, etc., and I suspect they get very little *really good* honey. That being the case, they import some good stuff from other localities to mix up with theirs to make it salable—probably they might get some from Canada if it were not for the duty. That being the case, Mr. Miller, we can overlook your ideas on "blending," and we will give you full license to go ahead and do all the "mixing" you care to.

Most Severe Winter on Record

In speaking of the weather (page 48), I am made to say that on Dec. 17th it looked like a change to warmer weather. Of course, it should have been *Jan.* 17th, as the copy for February was sent on that date. Sorry to say that my prophecy as to warmer weather proved to be otherwise, and since that date we have had the most severe winter on record—officially, the Toronto observatory says the coldest January in over 50 years, and February up to date (Feb. 13th) looks as if it was going to break another record. Saturday last was the coldest day in 17 years, according to the Toronto official figures—19 degrees below zero. But that is letting us down easy, for all "unofficial" thermometers registered from 22 to 34 degrees below.

As to how this will affect outdoor bees remains to be seen, but judging by external conditions in my own apiaries so far, I do not anticipate trouble unless this awfully cold weather continues too long. I have 20 colonies at the home yard in hives made with double boarding, with heavy paper between, and with them it will be a pretty hard test. One trouble has been to keep the entrances free from ice, as the moisture condensing on the sides and ends of the hives would run to the front and cause trouble. The less the protection the hives have the larger the entrance has to be, and this is (to me) a pretty good argument in favor of well-protected hives in our climate.

By the way, this will be a good season to test out the paper-covered hive, and if any are wintering their bees in that style a report will be appreciated.

As to the winter weather spoken of, I have an idea that there have been seasons with more stormy weather, and more really disagreeable days. But the cold since Jan. 5 has been *continual*, which accounts for the very low monthly average temperature.

Short Course in Bee-Keeping

On page 48 I mentioned the Short Course in Bee-Keeping as being in progress at Guelph College at the time I was writing. Needless to say the interest in the different sessions continued right through the whole two weeks, and no doubt much practical information was received by the large number of students in attendance. While I was attending another course, yet it was an impossibility to stay away from the bee-keepers all the time, and I generally managed to get around to them at least once a day.

In common with all the Short Courses in connection with the college, the bee-keeping course was intensely practical, and experience has shown me that the "show me" attitude is by far the best method of imparting knowledge to beginners in any line of work. And just here I may say, that with the men like Clark, of Borodino, telling how to rear queens, there was a chance for others besides "beginners" to learn something. The same thing might be said in connection with the practical talks and demonstrations given by Mr. Sibbald on the general management of apiaries, and of course the different lectures of Mr. Pettit, the Provincial Apiarist, were highly appreciated by all privileged to listen to him.

Aside from these strictly bee-keeping topics, etc., the students were treated to lectures from different members of the college staff, who took up various phases of work indirectly connected with the bee-keeping industry. Altogether it was no doubt a very successful Short Course viewed from every standpoint, as I found all the students enthusiastic, the Provincial Apiarist likewise, and President Creelman made no secret of the fact that he was pleased with the large attendance. These various factors augur well for the future status of bee-keeping at the college, and any unselfish person can not but be pleased with the progress being made in our industry.

Improving the Honey-Bee

As to the improving of the honey-bee, written about so entertainingly on page 50, by Mr. A. C. Miller, I must confess that my short visit of 4 weeks at the Guelph College this winter has made me quite skeptical as to the chances of making any very *rapid, permanent* changes in the characteristics of the bees. It is said that a "*little* knowledge is a dangerous thing," and while I didn't get even enough for that, yet I confess that the brief glimpses into Mendelism and other laws of breeding have served to make me believe that the breeder of bees has a tremendous task when he sets out to make any decided changes in his stock in the course of a very few short years.

It may be argued that breeders of live stock, such as cattle, horses, sheep, poultry, etc., have made great strides, but please remember that they do not have to reckon with parthenogenesis, and the impossibility of controlling the male side of the breeding stock. Even without these difficulties, it is surprising to learn how often breeders meet with disappointment; and while in their case a mutant or sport is comparatively easy to keep true to type, with bees we can not claim that advantage, owing to the difficulty of controlling the drone problem.

Just at present I am strictly in the "don't know class," in the matter of claims made by different men, and while in that condition I trust I may be excused for being so skeptical—anyway, honest doubt is better than being too sure, and then find out after all that we have been mistaken.

Just a parting word on this question: The very little I have been able to glean on the subject under discussion, convinces me that the claims made as to taking bees and in a few years producing offspring from them with *longer tongues* than the average, is a "joke." At the same time let us welcome the honest investigator, and if any one can succeed in changing any of the characteristics of the honey-bee to the betterment of the race, all honor to him even if such changes are made along lines directly antagonistic to Mendel or any other so-called authority.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Delta County (Colo.) Bee-Keeping

Delta county is a typical county of the Western Slope in Colorado—desert of a most pronounced type—sage-brush, shad scale and chico growing on the yellow, almost-bare clay-soil. Scarcely any grass grows except what is irrigated, and the prairies and mesas are green only in the spring. But such soil!—just irrigate, and the way things do grow—the roadsides where irrigating water can get at the roots of the plants will shoot up weeds to a prodigious height, and the weeds do grow so high that teams on the roads are hidden by them. To the north, rising from bare yellow mesas towards Grand Mesa, mountain high and covered with timber with beautiful lakes, I am told, on its flat summit. From the summit of this mesa the city of Delta gets its water-supply, which is better than the water of many Western Slope towns. It is piped something like 20 miles. Grand Mesa is the largest and highest in Colorado, and rises to about 10,000 feet elevation, or about a mile above the little city of Delta.

To the southeast rise the steep-sided mesas, yellow and bare as the mesas that hover under the shelter of the Grand Mesa. These mesas to the southeast rise quite high, and as you go farther back become real mountains, and through them is channeled the wonderful Black Canyon of the Gunnison, the sides of which rise several thousand feet, and so narrow that the chasm is impassable for a good part of its length. From this canyon the Gunnison tunnel cuts through under these mountains and mesas for 6 miles, and spills the waters of Colorado's largest stream into the Uncompahgre Valley, several miles above Montrose, and about 30 miles above and south of Delta.

When the waters of the Gunnison are fully conserved they will irrigate hundreds of thousands of acres of new land. So far, the curse of the Western Slope has been too much water, thousands of acres have gone to seep, caused quite probably by the use of too much water.

The sides of some of these mesas are rocky cliffs, and wonderful stories are told of the tons of wild honey to be secured by the use of ropes and tackle, and several sticks of dynamite! I believe it was a dreamy old bee-keeper told me a story of an old trapper who caught a grizzly bear sniffing around the edge of one of these cliffs. The trapper came over the next day with ropes and pails to get the honey he thought was near by. Leaning over the cliff and looking down he saw, about 50 feet from the top, and perhaps 150 from the bottom, thousands (?) of bees flying in and out of the rocky side of the cliff. Tying the rope securely around his body under his arms, he passed the rope around a smooth-surfaced cedar-tree so that the rope would slip easily. He began letting himself down over the edge. The rope was smooth, and so was the cedar, and his arms were strong. He could raise himself by giving the rope in his hands a strong pull. He soon had let himself down to where the bees were going in and out. and tying the rope in his hands, through the one around his waist was securely suspended close to the bees' entrance.

The rock was shale, and by kicking with his feet and pulling rocks out with his hands, he soon had uncovered the bees' store-house and cave. He had his pipe as his only smoker, and his jack-knife for a tool. But he soon had his pail full. He would pull himself up—empty his pail and come back for more honey. Fastening the pail through his belt he gave several strong pulls on the rope. He did not rise so easily as before—his bucket was full of honey! He, however, raised himself about half way when the rope slipped off the root it had been rubbing over at the crest of the cliff, and came right across the edge of a sharp protruding rock. He was swinging back and forth in mid-air—afraid to pull longer for fear he would cut the rope. At the first swing he heard a sharp cutting sound, at the second, upon looking up he saw strand one severed; swing three, and the next one gave away; swing four, and our hunter's vision became dimmed, and that's the last our friend remembered that day.

The side of this hill sloped away from perpendicular toward the bottom, and from the marks visible the next day, it appears the first impression made on the clay was some 25 feet below the bees' cave. Jimme Goodrow was up at his headgate the next morning, and hearing a busy hum among the chico, found our hunter badly battered up and vainly trying to keep the bees away from his honey-bedaubed anatomy. "Been huntin' bees again, eh!" growled Jimme. Jimme looked up at the cliff and remarked, "Well, if it hadn't been for the seep-water softenin' the clay on that 'er hillside you'd 'a been in kingdom come. Any bones broken? Well, you jest stay here and be as comfortable as you can until I get the wheelbarrow; I never could get a wagon through this chico-brush."

What do you think of that for a Delta bee-man to tell a tenderfoot?

Wild bees are plentiful in the cedars and in the rocks, and that is one reason that foul brood is so hard to combat in Delta county. Mr. Ensley, at Read, took quite a few colonies out of the trees and rocks when he was first getting a start in bees. During August, the first time I was there for any time, the sun beat down with a blistering glare, and off to the south the peaks of the Uncompahgre Mountains rise into the blue with an Alpine sheer ruggedness that suggests coolness, but brings none to the body. Following around the base of the mesa we wind back and forth until we come out on top, and here are fruit-farms of from 10 to 100 acres, with much general farming also being done. Onions, potatoes, alfalfa and grain are extensively grown. The second growth of alfalfa was yielding some honey, but the turnips were cutting down the yield a great deal, for I found hundreds of them in nearly every bloom that I examined.

Delta county has several hundred bee-keepers, and most of them own land and are prosperous. Some are homesteading and making a living from bees while doing it. There are probably 15,000 colonies of bees in the county, and if foul brood were better under control the county would doubtless support twice as many. I was told that 12 cars of honey were shipped in 1910, but that not more than half as much would be shipped in 1911. I think both of these estimates rather large for full carload shipments.

The honey produced is about half and half comb and extracted. The bee-men get from 6 to 7 cents a pound for extracted, and 10 to 11 for comb honey. The bee-keepers here sell early, and I believe were sold out the past season before almost any other section of Colorado. Alfalfa yields honey from all three growths, and if the weather remains warm the bees will store honey until the last of September. The whitest honey is gathered in June and July, but last season the best honey was light amber. Sweet clover grows everywhere, and cleome is abundant, but I am told that cleome does not yield any honey to speak of.

Bee-keeping methods, as a whole, are behind those in northern Colorado, but there are several progressive bee-men in the county, and things are improving. Box-hives still abound, and many make no pretentions to opening their colonies from one year to the next. These bee-keepers are fast being wiped out by foul brood.

One of the greatest troubles in marketing honey in Delta county is the lack of uniformity in grading and packing comb honey. The bee-keepers are getting together, and this year will see quite a number of comb-honey producers using uniform shipping-cases, and grading according to the Colorado Association rules.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Getting Started With Bees

Mr. Wilder:—Our family are all yery fond of honey, and as we have a suitable place for bees, I would like to start with one colony, and as I learn their culture I would like to increase until I have enough bees to produce honey for home use.

I do not know a thing about bees. What would you advise for a starter?

Charleston, S. C. Wm. H. Burch.

I would advise you to read as much literature on bee-culture as possible. By way of an outfit get a bee-smoker, a pair of gloves made to handle bees with, a bee-veil, and a colony of Italian or Caucasian bees in an 8-frame observation hive, 1½-story.

This is the surest outfit to get beginners deeply interested in bee-culture, for the bees can be seen inside the glass hive at work, which will arouse great interest and study, and cause great inspiration; and at the same time the frames containing the comb can be lifted out and the bees in this way investigated.

Honey Prospects for 1912

So far prospects perhaps were never so bright for a good yield of nectar throughout Dixie. The abundance of rain will cause the honey-plants to bloom well and normal, which has been the case for the last two seasons, and which partly accounts for the short honey crops, especially along the coast where the main honey-plants are small shrubs, bushes, weeds, or vines; which is also the case out in the interior of the country in many locations. These small plants can not withstand the drouth and forest fires which follow as the larger honey-plants can, and this greatly cuts off the flow of nectar.

Owing to the extremely dry summer and fall there are many bees in poor condition, because the supply of nectar and pollen was greatly cut off, and the bees could not build up and go into winter in good condition.

Owing to the very bright prospects that are before us for the approaching season, bee-keepers should put forth great efforts to get their bees in the best possibe shape for the honey crop.

Becoming an Extensive Bee-Keeper

Mr. Wilder:—I want to be an extensive bee-keeper. I have some knowledge of the business, but not enough to go into it extensively. How long should I work with some progressive bee-keeper before I could obtain the necessary instructions?

Lawenceville, Ga. J. Allen Smith.

This is a rather hard question to answer, for two reasons: First, so much depends upon your ability to learn bee-keeping in all its branches, and properly apply the knowledge obtained with the necessary energy.

Second, much depends upon how you expect to go into the business. If you expect to start with a small business and build it up to a large one, perhaps one season's work with a good bee-keeper would be sufficient. But if you expect to buy out an already established extensive bee-business, you would better work at least two seasons, and more would be better, for it requires a lot more practical knowledge to take hold of and carry on an extensive business than a small one.

I don't think it would be advisable to use the combs of honey as you suggest, unless the swarms were very small, or you could use them in this way for your last swarms at the close of the honey-flow, for such swarms would most likely need them. But large, early swarms would not need them for best results.

At the beginning of the honey-flow, and during the greater part of its duration, all frames of honey mostly sealed should be kept extracted, and the empty combs inserted in the middle of the brood-nest. This would mean wholesale bee-production at the proper time, and a great honey harvest.

Back to "Dear Old Georgia"

I stated in the "Dixie" department in the December issue that wife and I left Georgia on Nov. 15 for Florida, where we expected to winter, or give the bulk of the cold weather the dodge, which we have done, and now (Feb. 15) we are getting ready to return to Georgia to begin our busy season, and indeed we feel greatly benefited by the trip in every respect. It has been the pleasantest winter of our lives—no frost, ice or cold, chilly wind to cause our frail bodies to shake and quiver, for most of the time it has been pleasant and balmy. I feel greatly recuperated after last season's hard toil, and I can enter the approaching toilsome season with greater vim and inspiration than I ever have before, and I hope and expect to press harder for the goal than ever.

But, aside from this, what did we accomplish by the trip? Well, I had my cottage ready built in my mind before I arrived, and a bill of material ready made out for it, and by the time I got it on the ground, "Jack"—the foreman of our bee-business in this State (Florida) was here ready to help. He had never done any carpenter work, and it had been some years since I had done much at the trade, but soon the old "tricks of the trade" came afresh in my mind, and it seemed that my talent for the trade was greater than ever before; and, my! how we made the saws and hammers ring, and in 32 days from the time we started we were finishing up the 6-room cottage, which has a hall through it, and the rooms are not small, either. It is well finished up, too, and it is no bull of a house or a shack. The cut shows the front and rear views of the cottage which appear so beautiful, sitting out on a ridge, nestled among the orange, tangerine, and grape-fruit trees, the delicious fruit of which we have so sumptuously feasted on during our stay here, and under the cool shade of which we have sat so many times and enjoyed the steady, balmy south breeze, and planned out the most of the work of our busy season which is fast approaching.

Since we have been bee-keeping we have made a number of investments in real estate with the net returns of our blessed little bees, but none do we appreciate like this one; and it will be a source of great inspiration to me during the busy hours of the coming season. Oh! what a joy it will be to me to wind up the season's work and return to this beautiful country where the climate is so pleasant, and we are so well fixed to live and enjoy ourselves.

THE WILDER WINTER HOME IN FLORIDA.

We have not been here alone, either, for quite a number of bee-keepers from the Northern States are here "wintering," and the little bee has been the subject of many long and interesting conversations, a summary of which I will give at another time,for some very important points were brought out relative to our industry.

Fellow bee-keepers, make your arrangements to meet us here late next fall and spend the winter months, and we will give you a good time in the pleasant, sunny "Land of Flowers."

Wintering and Other Qualities of Caucasian Bees

MR. WILDER:—I am writing you at this time for I read your articles in the American Bee Journal, and I saw that you had never had a report as to the wintering qualities of the Caucasian bee here in the North. I have had the Caucasians for a number of years,and am well pleased with them, even if there are still some fault to find with them. But when I sum up their bad qualities, and then try to balance them with the good ones, I find them away ahead of the other races, and I have tried about all there are to try, even paying D. A, Jones $15, away back in the early '80's, for a pure Holy Land queen, and had to kill her the second year in order to save myself and family from death by stinging (?), for they were not to be quelled except with chloroform.

As to wintering of the Caucasians, I will say they are the most hardy bee in existance today. They will stand almost any kind of usage, and I can winter in my cellar almost a mere handful, when the other races will worry and desert their hives. Here in the North there are some who winter bees out-doors, but I at times think it is almost an impossibility to do it.

I honestly think I can get a third more honey in my location with the Cancasians than I can with the Italian. I have both, and run about even as to number of colonies. I breed my Caucasian queens at the main yard, and fertilize them in an isolated place. I have only the gray variety; I have had the yellow, but I think them inferior to the gray. I import all my breeders from the Caucasus district, and I have had some from away down east, bordering on the Caspian Sea, but they were all mixed up, both yellow and gray.

As you say, they are good proplizers, but if the entrance is made dark, and not too large, that will lessen their propensity for daubing up things with their dark-brown glue, which resembles them in color

Ingham Co., Mich. A. D. D. WOOD.

Glad to hear from you, Mr. Wood, relative to the qualities of the Caucasian bees in the North. So far nothing but good reports have come in of the past season, from either North or the South, as to the qualities of this variety of bees. They have proven to be at least one-third better than any other bees I have been able to obtain.

CONVENTION PROCEEDINGS

Eastern New York Convention

The Eastern New York Bee-Keepers' Association held its 4th annual convention Dec. 21, 1911, at Albany, N. Y. Owing to unfavorable circumstances only a short notice could be given, and consequently there were only about 30 bee-keepers present.

The proceedings consisted mostly of routine business, and the consideration of technical questions pertaining to bee-keeping.

The members reported the past season as the poorest in many years. The production of honey was less than half of an average crop; but with the optimism characteristic of bee-keepers, they all hold bright hopes for the future.

The Secretary's report showed a list of 103 members since the organization of the Association, 4 years ago. The Treasurer's report presented a healthy condition of the treasury with a neat balance on hand.

Pres. Wright, in his address, reviewed the condition of the industry, referring to the very unfavorable season and the shortage of the honey crop, and noting that a material advance in prices had resulted, which it was hoped might be maintained in the future.

He called attention to the action of the National Bee-Keepers' Association in reorganizing that body and adopting a new constitution for the working of the Association on a new and entirely different plan. Much consideration was given to the subject, and many expressions of disapproval were offered. It was decided unanimously to take a vote by mail of all the members, on the question, "Shall we renew our membership in the National Association under the provisions of the new constitution?"

The annual election resulted in the re-election of the entire board of officers, as follows: President, W. D. Wright, of Altamont; 1st Vice-President, A. Johnson, of Schoharie; 2d Vice-President, C. W. Hays, of Brookview; Secretary, S. Davenport, of Indian Fields; and Treasurer, M. A. Kingman, of East Greenbush. This makes the fifth term Mr. Wright is entering upon as president, he having served in that office since the organization of the Association.

A communication from the Hon. R. A. Pearson, State Commissioner of Agriculture, was read, requesting the appointment of a delegate to represent the Association at the annual meeting of the New York State Agricultural Society. S. Davenport was elected as such delegate.

A communication to the State College of Agriculture had been directed to be made, requesting that experiments be conducted along the line of reducing the length of the corolla of the red clover blossom, so as to enable the honey-bee to obtain its nectar. C. B. Loomis presented a communication on the subject from Prof. H. W. Webber, of the State Agricultural College.

C. B. Loomis also presented for examination and consideration a sample copy of a writing pad for the use of school children, having appropriate illustrations of the honey-bee, queen and drone, and a descriptive article on the honey-bee and the desirability of honey as a food. This pad is issued by the New York State Association of Bee-Keepers' Societies, with the object of advertising honey and increasing its sale.

A proposition to establish a honey exchange at Albany for the purpose of disposing of the honey crop of members of the Association was largely discussed. A committee of six—Pres. W. D. Wright (ex-officio), C. B. Loomis, I. V. Lobdell, D. L. Woodward, F. R. Stevens, and Alden Hilton, were appointed to investigate and consider the matter, and report at the semi-annual convention.

The question-box was opened, and eight questions were considered and answered.

This gathering of bee-keepers proved to be one of the most interesting, enthusiastic and satisfactory ever held by the Association. S. Davenport, *Sec.*

The Oklahoma Convention

There were present the smallest number of bee-keepers that have ever attended a meeting of the Oklahoma Bee-Keepers' Association, held at Stillwater, Okla., Jan. 18, 1912.

Nearly every number of the program was filled, either by the party present or sending in his paper.

F. W. Van DeMark was constantly in attendance with a large fund of information gained by years of experience in Oklahoma, and extended many courtesies to the visiting bee-men.

Prof. Sanborn was able to attend more of the sessions than usual, and manifested a lively interest, and freely offered his opinion on many points of interest, but unfortunately for those in attendance, was shoved off the general program by the necessity of its re-arrangement to accommodate out-of-town speakers on other subjects who had to be given the time that best suited their convenience.

It was voted not to become a branch of the National Bee-Keepers' Association at present, and the membership fee was reduced to 50 cents.

The following resolutions were adopted:

Be it resolved, by the Oklahoma Bee-Keepers' Association, that the A. & M. College and Experiment Station be requested to carry on more experiments along apicultural lines, to determine the best race of bees, the most useful hive for the farmer bee-keeper, the best manner of feeding the bees, and also to experiment with different honey-plants.

We also request that an apiary be established at the College, and some help by lectures and exhibits on some of the future demonstration trains be given.

Be it further resolved that we tender a unanimous vote of thanks and appreciation for the courtesy extended us in announcing our program in the College literature, and furnishing us with a comfortable room in which to conduct our meeting.

The next meeting will be held at the State Fair Grounds, Oklahoma City, Okla., during the period of Sept. 23 to Oct. 5.

The following is the list of officers: N. Fred Gardiner, President, Geary, Okla.; Geo. H. Coulson, Vice-President, Cherokee; G. C. Boardman, Secretary, Shawnee; and G. E. Lemon, Treasurer, Nash.

The Indiana Convention

The Indiana State Bee-Keepers' Association held its annual meeting at Indianapolis, Ind., Feb. 22, 1912, which was fairly well attended.

The meeting was called to order by the secretary, Geo. W. Williams, of Redkey, Ind. In the absence of the president and vice-president, Mr. Mason Niblack, of Vincennes, presided.

An address was delivered by Dr. E. F. Phillips, of Washington, D. C., on American and European foul brood, illustrated by stereopticon views. It was very interesting and instructive, and was discussed at length.

Mr. E. R. Root, of Medina, Ohio, gave a good talk on some very important questions. The wintering of bees was fully discussed and some very important points brought out.

The question-box contained questions which were of interest to all.

The following officers were elected for the ensuing year: President, Mason J. Niblack, of Vincennes; vice-president, C. H. Baldwin, of Indianapolis; secretary, Geo. W. Williams, of Redkey; and treasurer, E. A. Dittrich, of Indianapolis.

Messrs. E. A. Dittrich, J. W. Sw and John C. Bull were elected delegates to the National convention of 1913.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

The National Bee-Keepers' Association

It is a great pleasure to see that there is "something doing," and more to be done, by the way the National Bee-Keepers' Association is organized now with its new Constitution. Heretofore the National Association did not really amount to a very great deal to its membership, aside from a few benefits that were derived by belonging to the Association, and the aid lent it in securing things that can only be gotten by united effort. Since the reorganization of the Association, which it practically is, there has sprung up a good deal of new life and interest, and that there will be some results need not be doubted in the least. Since the members of the main part or the head of the National Bee-Keepers' Association are active or "real live wires," there is no question but that the various branch organizations will co-operate promptly in carrying out in a co-operative way any important things that may come up before the Association.

The writer has always been interested in anything that had some "real life in it, or that was possessed of some get-up and go qualities that keep things moving and accomplish something," and the way the work of the National Bee-Keepers' Association is starting out is a pleasure indeed, and it is only hoped that this interest in the Association will continue, and that much good may be accomplished throughout the year and the time to come.

Of much interest is the matter in Article 8—organization of branch associations of the National Bee-Keepers' Association. It is hoped that bee-keepers who are so situated that a local branch may be organized will avail themselves of the opportunity, and thereby assist in one great co-operation of united effort and accomplishment. It is sincerely hoped that our grand Lone Star State of Texas will have one of the largest of these, or a number of such local branches, since the bee-keepers in Texas are numerous enough to organize many such with the required number of not less than 25 members.

The writer has always been deeply interested in the organization of bee-keepers, the getting together of those who are interested in one and the same cause or vocation, and working in unity and co-operation for all that is good and of interest to their calling. It is hoped, therefore, that the bee-keepers of Texas may awaken to opportunities that are here for them at this time;

that they may get together and work more in unity and harmony toward accomplishing great good and furthering the cause of the bee-keeping industry of our great Lone Star State. Let us resolve now that we will not stand back, but be with those in the lead toward achieving much in a united effort for a better and a more profitable bee-keeping.

Value of Letters from Bee-Keepers

Since our request in the January issue for "newsy letters" from the readers of Southern Beedom, we have had the pleasure of quite a number of responses which are not only an encouragement to us in our department work, but in some letters points are brought out that are of more or less interest. We shall be glad to hear from our readers throughout the year, and although we will not be able to publish letters in full, we shall use such parts of them as may be of interest to our readers.

One of our old-time contributors, Mr. L. B. Smith, has always had a good word to say for the "old reliable" American Bee Journal and its various departments. For this reason mainly we are publishing parts of his letter, and another reason is because it shows as nearly as possible the kind of season that existed in Texas last year, which resulted in practically only half a crop of honey harvested in our big State as a whole; but in spite of this, the total output of the Lone Star State was an enormous one:

Editor Scholl:—Seeing your request in the American Bee Journal of January for us all to write you of our success or failure with the bees the past season, I take the liberty of writing you. I am compelled to confess I have had more of the latter experience the past season than of the former, but you say both are acceptable.

Starting in the spring of 1911 with a little less than 300 colonies of bees about 50 were kept at home, the rest in out-yards from 4 to 12 miles away. The winter of 1910 and 1911 was warm and dry over most of the State, and the bees generally wintered quite well and were strong in numbers early and well supplied with stores. This alone would almost insure a prosperous year with the bees. The season, however, seemed "all out of joint," so to speak, from start to finish. We had some real summer weather in mid-winter, which brought out many of the pollen-bearing and early honey-yielding plants at an unseasonable date, followed by a late, cold spring.

The bees, however, seemed so determined and prosperous that nothing seemed to check them, and they were swarming at an early date. So much so that I lost a few swarms in the out-yards before I suspected it. I never saw swarms as persistent in absconding in my 30 years as an apiarist. They would leave brood, honey, or anything that seemed fit to give them and "hike out" to the woods. This was a general complaint of all classes of bee-keepers, and one of them told me he hived one 4 times and then they "skipped" for parts unknown. I don't know the reason for this unless it was the scarcity of new honey at the time of swarming.

At about the time the first swarms commenced to issue, the long-looked-for rains set in, and it rained almost continually till May 2d. Then it stopped off short, the weather changed from cool to extremely hot and continued throughout the summer. The abundant rains caused vegetation of all kinds to take on a growth we seldom see after such a dry winter as we had had, with the result that the whole face of the earth was a perfect flower-garden by May 10th. The flowers seemed well laden with the precious sweets that gladden the heart of the apiarist, and the bees practically gave up swarming and settled down to business at honey-gathering in a way that caused us to feel almost assured of a honey crop. But, alas! we realized only too soon that a long summer drouth had set in at least a month too early, and continued throughout the year 1911. By June 10th the beautiful flowers that had gladdened our hearts but a few weeks before were now a brown, withering mass, under the scorching rays of a semi-tropical sun, with the result that I secured only a little over 2000 pounds of extracted honey, and a few hundred pounds of comb honey, and had some feeding to do in the fall.

L. B. Smith.

Rescue, Tex.

Realizing how the tale of one's experience during a successful year will encourage other bee-keepers, especially our younger ones of the craft, and how mistakes and failures perhaps may be avoided by reading letters telling of these, is a reason why we expect to publish once in a while such letters. We know from our own experience that reading them will help certain ones in one way or another in their chosen work, and is often a cause of their being successful in their undertakings. For this reason we are reproducing parts of one of our subscriber's letters here:

Dear Sir:—In the January issue of the American Bee Journal you request your bee-keeping friends to send you "newsy letters" about themselves or about their successes or failures. I have read all that you have written, for I am a reader of all the bee-papers published in the United States and Canada, and your articles have always been highly appreciated by me.

Twenty-three years of age now, I was born of German parents and reared on the farm where my father kept bees in box-hives to furnish honey for our own use. During the swarming season father just hived the largest swarms and let the rest go to the woods.

At the age of 12 years I contracted the bee-fever and hived every swarm, whether large or small, and have since increased my number of colonies to 210. Enough hives are ready to increase to 500 colonies this spring. I am also working 200 colonies on half share. It is my intention to go into the bee-business extensively, so I will work more for increase than for a large crop of surplus honey.

I make my increase by the "shook swarm" method. For the last few seasons I prevented swarming as much as possible, but sometimes I meet such a stubborn colony that insists upon swarming. Last season I had a few of these.

I have a way of my own to hive virgin queens or any unclipped queens. It is simple and practical. Simply get a gallon can and put your empty hive to receive the swarm within 10 feet of the cluster. Then scoop about half a gallon of bees of the cluster and throw them at the entrance of their intended home. It won't take long for these bees to sound the note that a home is found. Then with the smoker give the clustering bees a good smoking till every bee is in the air. The flying bees will hear the hum of their sisters and at once conclude to join them, and the hiving is done.

The past season has not been very favorable for the production of honey. There was too much rain in the spring and not enough later on; however, I averaged 71 pounds of bulk comb honey per colony.

I have 50 divisible brood chamber hives in use at present, and am so pleased with them that from now on all of my increase will be in those hives. It is wonderful how many advantages that hive has.

In one of the bee-papers I read that you were going to rear your own queens, and afterward heard that you discontinued the rearing of queen-bees on account of other bees being moved close to your queen-rearing yard. I am of the strong opinion that this is one of the most profitable branches you can start to your advantage, for queens sent by mail are never the equal of the home bred. I started to rear my own queens 5 years ago, and am still doing so, and will continue it as long as I continue to keep bees. I have made it a rule to requeen all colonies every fall that did not come up to the average, and am very well pleased with the results, for my bees are considerably better than they were 5 years ago.

Elmendorf, Tex. Alfred L. Hartl.

CONTRIBUTED ARTICLES

Some Helpful Hints on Foul Brood Treatment

BY G. C. GREINER.

For a number of years the foul-brood question has been one of the main subjects in all our bee-papers. It has been discussed from all sides; signs and symptoms, treatment and cures, have been given by the different bee-experts, so that a detailed report of my late season's experience would seem like a useless repetition of what has been said before. Besides, we have Farmers' Bulletin No. 442, issued May 6, 1911, by the United States Department of Agriculture, that, I believe, anybody can have for the asking, which gives nearly everything connected with the disease and its treatment better and more complete than I could think of offering. Still, no two persons have exactly the same experience in any line, and by mentioning a few points that are not spoken of by any one else, I may help some unfortunate brother who has the same task before him that fell to my lot last summer.

We will take it for granted that foul brood has taken possession of an apiary to such an extent that shaking off the bees and the introduction of Italian queens is the only way to save anything from the wreck. The treatment requires, as all our experts advise, and I know from experience that this is correct, that all colonies should be made as strong as possible to prepare them for the ordeal. It does not pay to waste time with weak colonies, for the probabilities are that they will prove a failure during the season. As diseased colonies are very apt to be on the weak order, and as we have no sound, hatching brood under the circumstances to help these weaklings, the only way out is to double up or triple up, if necessary. To do this in systematic manner, the whole apiary should be arranged in twos or threes, as the case may be, before the operation of shaking off is ever attempted.

To prevent mixing up as much as possible when treated, it is an advantage to have these couples or triplets as far apart as they can conveniently be arranged. There is plenty of time between fruit-tree bloom and the opening of the first honey-flow to shift them about, for the shaking off should not be undertaken until a fairly good honey-flow is under way. Bees can then be handled without any danger of robber-bees transmitting the disease to healthy colonies that may be in the yard or near-by.

Another part of the treatment—the one that generally causes the less experienced bee-keeper a great deal of anxiety—is catching the old queens. To be prepared for the shaking, it is very convenient to have them all caught and caged before hand. As they are supposed to be blacks (as the great majority of mine happened to be), they are not easily found, in many instances baffling the skill of the most experienced expert. For this reason it is well enough to begin hunting for them a week or 10 days ahead of the time they are wanted. If a queen is not found at one time, by examining the hive the next day she may come in sight on one of the first combs taken out. In this way I caged the queens of nearly all my diseased colonies (some 44 or 46) before the white clover flow began. Only in two or three cases I failed to find "the ladies" in spite of my repeated search, and research, and I was finally compelled to resort to the excluder at the time of the treatment.

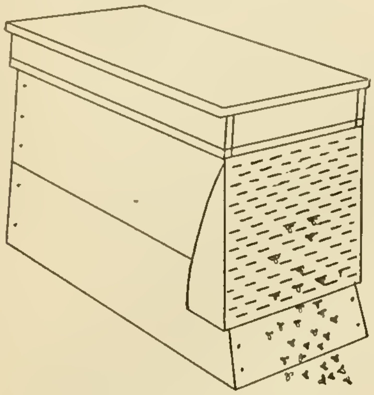


FIG. 1.—GREINER'S QUEEN-SIEVE.

The principle of the device illustrated at Fig. I, is not a new idea. To find a queen by means of the excluder has been repeatedly mentioned in our bee-papers, but, as far as I know, no detailed description of its application has been given. It is a simple affair; still, when we are compelled to resort to our own resources it is sometimes a great help to have some one else's experience to fall back on. Bees are very apt to clog up the excluder, and are thereby a great hindrance when trying to find the queen. To overcome this trouble, in a measure, the excluder should be as large as possible, and at the same time slant forward at the bottom. This seems to give the bees better chance to pass through the perforations than an excluder in perpendicular position. The one I use (see drawing) reaches from the cleat at the top to about midway of the stand alighting-board. Then it should fit any hive and be adjustable and removable instantly. The two wings, to which the excluding zinc is nailed, are simply a couple of pieces of ½-inch board that slip on each side of the hive and stand, and with a small wire-nail, partly driven in, in each, the whole rig is securely held in position. As a last resort to find a queen, I can recommend this device as almost infallible to any one in trouble along this line.

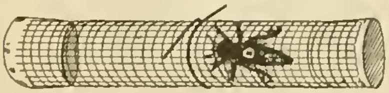


FIG. 2.—WIRE-CAGE WITH QUEEN ENCLOSED

Another point which I found by experience to be of great importance, is this: A colony should not be shaken off and made queenless at the same time. In their consternation and excitement, trying to find their mother, the majority of them will take wing and enter any hive where bees are in sight except the one we intend they should. If the colony under treatment is not entirely ruined by this desertion, it is so reduced that it is likely to prove next to a failure during the season. In case the queen has been previously caged, she should be suspended for a few days among the frames of the newly prepared hive the colony is to occupy (see illustration, Fig. 3), and if the new Italian queens are on hand, as they should be, they, too, may be introduced in the suspended cages at the same time. But if the queen has to be caught at the shaking off, she should be placed in the new hive as soon as found, and the excluder removed instantly.

The cage I use (shown at Fig. 2) has a number of advantages over the common mailing-cage used by the queen-breeding trade, which make it better adapted for this purpose, and, in fact, for introducing queens at any time. Made of common window-screen, with a piece of stove-pipe wire wrapped around it to serve as supports when suspended between the frames, it presents more open surface to come in contact with the bees than the mailing-cage. One of the end-plugs is permanently fastened by two or three little tacks, and the other, being the one removable, should have the selvedge-end of the wire-screen for its passage. This, too, makes a smoother passage for the queen, when being caged, than the sharp ends of the wires on the opposite end.

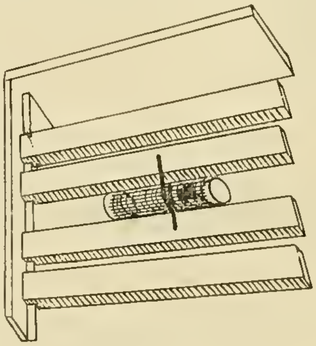


FIG. 3.—SUSPENDED CAGE BETWEEN FRAMES

La Salle, N. Y.

The Solar Wax-Extractor

BY C. P. DADANT.

A beginner in bee-culture has recently asked me about the advisability of investing in a solar wax-extractor to the exclusion of other wax-rendering machines. Although I believe in the usefulness of solar wax-extractors, most practical bee-keepers who have tried them recognize that they are not by any means to be used in all circumstances.

The first mention I ever saw of this method of rendering beeswax by solar rays was in the '70's, in L'Apicoltore, the Italian bee-paper. Italy is under the same latitude as our Middle States. The sun has a great deal of power in that country, and shines most of the time. No one thinks of Italy without the prefix "sunny." At the first description of the solar wax-extractor, we had no rest until we had made one. A little later, in this country, O. O. Poppleton made the invention of a similar machine without having ever heard of them.

The solar extractor proved very beneficial in rendering the odds and ends of the apiary. We are in the habit of gathering the dribs of brace-combs and bridges which the bees usually build between their combs and over the top of them. These we roll into a ball which is put away until some suitable time. With a wax-extractor these small lots may be rendered as fast as they are gathered. This saves them from possible loss or destruction by the moth, if they were left exposed. With an apiary of 50 to 100 colonies I believe that the careful apiarist will save enough to pay for the cost of his solar extractor in one or two seasons.

But when we tried the solar extractor for old combs we were very much disappointed in ascertaining that the cocoons and residue absorbed nearly all the wax which they contained.

Many apiarists assert that there is no wax worthy of mention, in the old, black combs. The trouble lies with their method of rendering them. If dry, black combs are heated with little or no water, the dry cocoons and residue become soaked with wax and give it up afterwards with difficulty. Our water-melting process has always been to crush those old combs during the cold weather, at the time when they are most brittle, and afterwards soak them thoroughly in soft water, either by putting them in a sack or under a cover and loading them with stones to sink them in the water. If the reader tries this, he will find that in a very few days the water has become yellow or muddy from the dissolving of a great deal of the slumgum. But the wax does not dissolve or rot, even if it were left under long enough to have acquired an unpleasant smell. The effect of this soaking is to prevent the absorption of wax, since the thoroughly wetted residues can no longer absorb the wax. The breaking or crushing of the combs previously, helps this soaking, and prevents the wax, when it is melted, from lodging into the cell-shaped cocoons, from which it would afterwards be removed with difficulty. With the use of the solar extractor, it is out of the question thus to soak the residues, for the first effect of this soaking would be to create a great deal of steam by evaporation of the water, as soon as we placed our soaked combs into the extractor; neither would the wax melt until those combs were again dry.

It may therefore readily be comprehended that it is entirely out of the question to melt old black combs with the solar extractor and expect any adequate returns, while the use of water in some sort of boiler will permit the separation of nearly all the wax from the slumgum of the ugliest combs.

When it comes to the rendering of cappings, it is evident that the solar may be used without loss. However, unless we have a very small quantity, we will find that we get a brighter lot, though not so white, but cleaner, by using the same water-melting process. Whatever residue present usually separates very easily from the wax in soft water, the wax rising to the top, and the residue almost without exception going to the bottom.

The solar extractor has one advantage, however—it will make the wax lighter in color—more nearly white—for the rays of the sun have a tendency to bleach it. But if there is the least trace of untinned iron in our solar extractor, its presence will reveal itself by the existence of a black, rusty streak wherever the wax touched it.

One of the greatest disadvantages of the solar extractor is that the combs may be rendered by it at a temperature very much below the boiling point of water. I call this a disadvantage, because if by accident one is rendering combs of a colony which has died of some contagious disease, such as foul brood, there is great danger of transmitting the disease to the bees that may come to it. I have sometimes seen cakes of wax which had been rendered with solar heat fairly dripping with honey. Such cakes of wax need to be remelted with water and kept at the boiling point of water for a while, to make sure of destroying all possible germs.

Of course, the bee-keeper who renders his own combs generally knows whether there is disease among his bees or not, and he can take precautions. But if he has wax from others, or buys the combs of colonies that have died, it is very much better for him to take no chances, and melt all the wax by the water process.

When we melt up the cappings, it is generally after having allowed them to drain in the uncapping can for several days, and even weeks. But they are still sweet, and we always wash them in water, and this water, after having been tested as to its sweetness, is used to make mead and vinegar. The European apiarists, who are much more prone to save every item more carefully than we do here, sometimes uses the water in which wax has been melted, if it is at all sweet, for vinegar-making or for distilling. In this case, they first filter it or clarify it by some process. In large apiaries where hundreds of thousands of pounds of honey are harvested, the cappings and the water from them constitute quite an item.

We figure that for every 100 pounds of extracted honey, we produce about 1½ pounds of capping wax, reckoned after it has been purified. So for 50,000 pounds of liquid honey, we would have about 750 pounds of net beeswax from the cappings. It would take a long time, or a large number of wax extractors, to render up this quantity. What is more important, the bulk of the extracting takes place at a time when the heat of the sun is no longer adequate—in late August, or September and October. With the water melting we can render them whenever we are ready.

Beeswax is so expensive and readily selling an article that it is worth while to use all possible means of saving every particle. That is why the solar extractor will always be a profitable implement in a bee-yard. It should be made of good material and shallow enough to allow the sun's rays to shine on every part of its inside early in the day. If some sort of cheap clock-work could be used to keep it facing the sun all day long, it would be much more active. But in our latitude a few hours suffice for a small load of wax. Neither bee-moths nor flies can withstand the heat of the noon sun during the three hottest months—May, June and July—under the glass of the sun extractor, and the wax rendered by this process is at once made safe for cash returns.

Hamilton, Ill.

Sting-Proof People—Comments

BY E. G. HANNA.

On pages 7 and 48, the discussion of "Sting-Proof People" is somewhat interesting. Whether some people are absolutely "sting-proof" I know not, but I am well aware that the bees actually make a difference in people.

A good many years ago, when I lived in the Southland, I had a yard with about 25 colonies of bees in it, distributed all over the yard under native trees. Our well was in this yard, and a path ran through it, both to the garden and the public road. One afternoon, about 5 of the family were seated about the middle of the yard pealing peaches, and the bees were flying everywhere, and we sat there for hours and not one of the family got a sting; but during the time three negroes came in the yard, one at a time, and sat down with us, and each of the three was stung before being able to get away. Can some scribe account for this unless bees make a difference?

Self-Spacing Frames.

On page 54, an enquirer wants to know if metal-spaced frames are better than staple-spaced frames, and Dr. Miller says he prefers galvanized shingle-nails to either. Now, if there is anything this scribe detests about an apiary it is a self-spacing frame of any kind. I used to cut out all my own frames with a buzz-saw, and I never made self-spacing frames. Then, I have bought a good many bees, and always with self-spacing frames, and they were always the hardest things on my temper of anything about the bee-yard.

If you have no propolis in your locality, and use a division-board in place of one frame, you get along; but otherwise, I have torn up many a frame in trying to get at the center of a hive. I like to have frames I can pry each way from the center of the hive, and can then slip out a frame with all ease.

Repression of Swarming.

On page 39, Chas. Reynders, in quoting from his German pamphlet, tells how to let bees rear their queen-cells, and of course you have to leave it to the bees as to how many they will start. My experience has been that as a rule they do not start as many as we want, and, besides, they are so light that we often spoil them in cutting out and handling. So this scribe long since quit letting the bees have their own way about it. I let them start the cells so as to get a supply of royal jelly, and then I make cells for them, and good, heavy ones, so I can break them off, or stick them on a frame at will, without any danger of spoiling them. Doolittle's "Scientific Queen-Rearing" will tell you how. I do not like the method here given.

Loss of Bees in 10 Years.

A decrease of 800,000 colonies of bees in 10 years does not look very good for the bee-business of this country. The fact is that when foul brood becomes as prevalent as it now seems to be, the average farmer will prefer to quit keeping the bees rather than go to the trouble necessary to eradicate the disease. In fact, the majority of farmers do not care for their bees enough to make a success with a few colonies.

Poor Surplus Honey.

I got about 50 pounds of surplus honey here last year from 11 colonies of bees, and most of it was the blackest, nastiest mixture I ever took from a bee-hive. As bees did nothing, I got so busy farming I neglected them, and did not "fix" them for winter, so I expect to lose most or all of them on account of the severe winter.

Spring Feeding and Spreading Brood.

By the time this is printed you would better see if your bees all have sufficient stores, and, if not, borrow a frame of honey from some hive which has a surplus, and exchange frames with the needy colony. You can help your bees to build up by spreading the brood, if you use good care and judgment not to spread faster than they can keep it warm. I have always gotten good results from spreading brood.

Good Resolutions.

"Making and Keeping Good Resolutions," on page 45, is worth re-reading. We ought always to remember that there can be no failure upon the Lord's part, but we may fail by failing to comply with *our* part of it.

Atwood, Ill., Feb. 14.

Handling Bees—How to Do It

BY G. M. DOOLITTLE.

From my multitudinous correspondence, and from what I have seen when visiting many different apiaries, I have come to the conclusion that there is a right and wrong way of opening a hive containing a colony of bees. The season when we must look after our bees will soon be here, and I thought perhaps I could do no better at this time than to give a few words on the subject of opening hives and handling bees.

Stings are sometimes dreaded by all, and if we are careless in our operations about the bees we are liable to be told in a very "pointed way" of our carelessness. And even when we exercise due care, there are times when the opening of hives as rapidly as is necessary where the apiarist manipulates colonies by the hundreds, is somewhat beset with stings. Hence, it behooves us to start out right with each colony as we proceed in these operations. Many of these stings are brought upon us by the manner in which the hive is opened. There is more in this operation than very many of us even dream. Many of our text-books do not give the best instructions on this point, so that even the beginner, having such a text-book, does not learn how to open a hive properly, while with those who have no text-book it is simply a matter of guess-work.

Then, many of the instructions given in our bee-papers are largely at fault, inasmuch as they are given from the standpoint of an apiarist having only very gentle Italians. These may be all right for such bees, but when a beginner comes to apply them to the blacks, or still more vicious hybrids, he is obliged to beat a hasty retreat, or receive so many stings that he almost wishes he had "never enlisted for the war." And nine chances in ten the beginner commences operations with such bees by finding some runaway swarm, a colony in a tree, or some bees left him by some relative having a few colonies in box-hives.

It took me several years to learn in this matter of opening hives, and here is what I learned: To open the hive of the average colony of blacks or hybrids, have your smoker well filled with partially decayed wood, having placed a coal of fire in the bottom before filling, then work the bellows till a good flow of smoke comes from the nozzle, when you are ready to proceed to the hive you wish to open. Arriving, blow smoke two or three times across the entrance, so as to start the guards back into the hive, and if you have reason to believe the colony an easily excited one, or no nectar-secretion is abounding, follow this with one or two puffs in at the entrance.

Now, noiselessly, and with especial care about jarring, pry up the cover at one side, and as soon as a crack large enough to admit smoke is made, blow in a whiff or two, and as the cover is gradually lifted, blow more across the tops of the frames, so as to start the bees down between the frames of comb. Unless you have reason to think they need more than this, do not blow smoke down between the combs, for by so doing the colony, especially if blacks, will be stampeded out at the entrance, and returning will boil up over the tops of the frames and sides of the hive, thus thwarting all prospects of finding the queen, should you wish to do so, as well as making all your manipulations very unpleasant.

If at any time the bees become restless and show a disposition to fly at you from the frames as you are handling them, more smoke will be required. By giving it at just the right point at this stage, the bees can be kept in quietude until you close the hive; but if delayed until quite a lot of bees get in the air and commence stinging the person or the clothes worn, nothing short of sufficient smoking to subdue such a colony entirely will answer. Under such conditions I have had almost literally to drive the smoke down through each range of combs, till nearly the whole colony was out at the entrance, or over on the outside of the hive before I became master of the situation. However, when nothing unforeseen happens after opening the hive of the most vicious bees, occasionally a few puffs of smoke floated over the tops of the frames is sufficient to keep them in good subjection.

With gentle bees it is a very rare thing that I blow any smoke at the entrance except when a profuse flow of nectar has suddenly stopped. At such times, and with a cool, cloudy day, when all the old field-bees are at home, almost any colony will resent handling without considerable smoke, unless more time is taken to open the hive slowly and cautiously than is at the command of the apiarist who has more than 25 or 30 colonies.

Now while I have spoken of opening a hive noiselessly, cautiously, and without jarring, do not get the idea that lots of time must be spent on each hive. On the contrary (but always having these points in view), the quicker any hive is opened, throwing the full light onto the co'ony at an unexpected point, the less liable are they to rally to a defence. By opening the hive gently but quickly, one will soon get so that before he has a chance to think twice the hive is opened and a frame out. Smoking at the entrances drives the guards from their place as sentinels. while the smoke floating over the tops of the frames seems to tell them "house on fire," while the quickly removed frame throws a flood of light into where it is usually dark, and the whole colony is so demoralized, or thrown out of its normal condition, that a fight for home is not thought of for some little time.

If our removal of the first frame is somewhat delayed, the colony relapses into its normal condition, when, unless more smoke is used, they will resent the removal of the first frame. I well remember getting the cover off a hive as here advocated, when at that moment an urgent call came from the house. On returning some two or three minutes later, I attempted to lift out a frame without further smoking, and was driven from the field with dishonor by the onslaught of hundreds of bees pouring from the tops of the frames, almost completely covering me, and singing and stinging at every "point of vantage" they could find. Where one leaves a hive uncovered in this way, never try to open it further till the bees collected on top of the frames have been stampeded down between the combs with smoke.

This is the order for the beginner: Smoke at the entrance first, through the crack under the cover as the cover is raised, then over the tops of the combs until the bees are running down, then removing the first frame quickly to very fast. Don't wait for the bees to fill with honey; let them fill while you are doing what you think is necessary, or not at all. Operating in this way, you will be very free from stings. I often work a whole day without a single sting, and at one time two weeks of steady work with the bees was done with only one sting, and that from pinching one when holding a frame up to the light to see if any eggs were in the cells.

One other point before closing: If through some mishap, or not getting the desired subjection expected, a dozen, more or less, of cross bees get into the air and persist in following us about like a "body guard," little peace can be had in the work of the apiary as long as these bees live. They are almost sure to be on the alert for you as soon as you enter the apiary, and keep this "guarding" up day after day. Stand up straight with your back to the wind, if there is any, when all of these bees will attack you from the front, when with a shingle, fence-separator, or a paddle of wood and wire-cloth, made for the purpose, they can all be killed in less time than it takes to tell how it is done. But if the day is still it will take longer, as at such a time they will scatter all about you so that only one at a time may be hit. But no matter what the day is, the killing of these angry bees is the only chance of any peaceful work in the apiary for many days to come.

Borodino, N. Y.

Requeening—When and Why

BY ARTHUR C. MILLER.

That fall is the true beginning of the bee-keepers' year is gradually becoming recognized. The season's crop is very largely dependent upon the attention given to the bees the preceding fall, and the principal feature of such attention is the requeening of the colonies. The more progressive among the bee-keepers regularly each fall remove all the queens from their bees and put in young ones. That the very highest results may be secured some are taking the pains to have all the young queens reared from the same mother, and as nearly as possible hatched at the same time.

To remove a vigorous queen doing full duty in a colony and replace her with a new one seems to many persons to be a grievous loss, but nevertheless it is the most profitable thing to do. Though a queen may be up to the highest grade in work this fall, next year, when most needed, she fails to meet requirements. Some queens, so far as can be seen, do just as good work the third season as the first, but it is impossible at present to predetermine which queens will be good the second or third year. Breeding of bees has not yet progressed to that point where characters are fixed, and until they are, and until the bee-keepers rear more uniformly well-grown queens, it will be wise to follow the plan of annual requeening. And even under this method, and with the best of care, some queens will not produce colonies as good as the others.

The best time to requeen depends somewhat upon the honey-flows of the section one is in, but it is customary to get the queen in after the main flow and before the last flow of the season. By putting her in after the main flow the bees' work is not interfered with, and by getting her in before the last flow opportunity is given her to supply an abundant population of young bees which will aid in the ripening and placing of the supplies for winter. Successful wintering of the colony is largely dependent upon the bees hatched late in the fall, and still more important is the strength they give the colony in the spring when breeding is active. The rapid shrinking of the bee-population in the spring known as "spring-dwindling" is due to an excess of old bees and a scarcity of young ones.

In the latitude of southern New England, mid-August is the favored time for requeening; farther north it is done earlier, and farther south later. Sometimes after the queens are put in no nectar is to be secured by the bees, and hence the queens do little or no laying, much to the bee-keeper's disappointment and disadvantage. A slight and constant supply of food will cause the queen to lay freely, and the desired population of young bees will be secured. The simplest, most effective and most economical method for this purpose is known as "Simmins' soft-sugar plan." A "division-board" feeder is filled with the soft, cream-colored sugar variously known as "A" or "Coffee A" sugar, and is hung in the brood-chamber next to the side of the hive, one or two frames being removed to make room. Water should *not* be added to the sugar. The bees will lick away steadily at this and use it as food. It seems to be all consumed by the bees and the brood, none of the liquefied sugar being stored in the combs.

If the bee keeper has neglected to requeen early in the fall, it should not deter him from requeening at all. A young queen put in so late that she will scarcely begin to lay before the colony clusters for cold weather, is far better than an old one left there.

Where a colony has a vigorous queen, one that is keeping the population large, it is the practise of some, in sections where a fall crop is usually secured, not to requeen such colony until after the first killing frost. In the hands of the skilled bee-keeper this is often good policy, but may prove disastrous with a beginner.

An advantage of the annual requeening system which is not often spoken of is the uniformity of colony conditions produced. If the work was done at the proper time, and at about the same time, all the weak colonies were either thrown in with the others or built up with brood and bees from the others, the following spring all the colonies will be very nearly alike, and if there is superiority in work of one over the other it can be pretty safely attributed to the queen, and she can be used as a breeder for the season's queens.

Providence, R. I.

Mendelism and Heredity Applied to Bees

BY DR. A. F. BONNEY.

There are two factors which will have to be dealt with hereafter in rearing queen-bees, in addition to the puzzle of parthenogenesis and the problem of mating and these are Mendelism and Galton's Law of Ancestral Inheritance.

That some pleasing results have been secured while the experimenters have been working in a strictly empirical manner, it is not enough. Bee-keepers are, or have been, satisfied with almost anything. They have accepted queens shipped by mail which could not possibly amount to anything unless to furnish eggs for another generation of queens, and such progeny must of necessity be variable if not eternally deficient. So far as I am concerned, I shall never again try to rear queens or good workers from queens sent in any other way than in nucleus and by express. I think one queen secured in this way early in the season will be worth a score sent by mail.

Any one wanting to post up cheaply on Mendelism, can secure some fine articles by getting from the Scientific American supplements containing them. These cost but 10 cents each, and are splendid. Those who wish to go deeper into the subject can get from the same office "Breeding and the Mendelian Discovery," by A. D. Darbishire, at an outlay of but $2. I have another work which costs more, and books can be got for less (as low as $1), and any of them will be a great help to the student who, like the writer, wants to go to the bottom of the matter.

Briefly recited, Galton's law is that an offspring inherits half of its nature from the parents, a fourth from the grand-parents, an eighth from the great-grand-parents, and so on into the decimals. It would seem from this that it would be easy to have several generations of pure-bloods, and thus solve the problem of breeding truly; but, unfortunately—if we may question the Creator's work—there is still another factor to deal with—atavism—the tendency to revert to some ancient ancestral type, a something which, skipping father, will go back of even the grandfather, and from some remote and mean forefather or forbear choose an undesirable trait and spoil our reckoning; and the writer suspects that *this is much more apt to happen with insects than the higher forms of life.*

To make much progress in the study of eugenics, biology and heredity, one must be working independent of an income, and most of our great experimenters are, large sums having been set aside for their use, and I regret to find that bee-keepers can not hope to do much. In the first place, our time is limited to two or three months in the summer, and if we fail to get what we want we are obliged to wait another year, which makes the rearing, intelligently, of queens, in the north half of the United States, at any rate, about as slow as the rearing of blooded cattle. If this looks unreasonable stop and consider how difficult it is to rear a queen and get her to give you brood (to say nothing of another queen) the same season. Last season I had hardly a drone in my yard on account of a lack of rain.

I can imagine the protests which will arise to this, and the advice I shall receive, but I am not alone, and in time may be able to make myself better understood. What I now want is to get bee-keepers to approach more intelligently this matter of breeding bees (queens), for surely a worker which lives but a month can not count.

What I hope to be able to do—as there are few bees near me, and some of them pretty pure Italians—is to develop a strain of bees which I can rear a queen from and say: "At least two-thirds of the queens reared from this bee will do so-and-so as to honey-gathering," for that is what we want, and if a colony will, in a normal season, store 100 pounds of honey, I for one do not care if they swarm every day. It is honey we want, not five yellow streaks, not long tongues (on paper), not bees so gentle that the babies can use them for playthings—*just honey!*

I want to close this rambling article by asking a few questions. Of what use is a 5-banded bee? Will one or two more yellow bands increase the tendency to store sweets? I wonder.

What bee-keeper in the United States, or the world, has as yet developed a strain of bees which will breed true to type? Remember that we have strains and breeds of pigs, chickens, horses, ducks—almost everything in the way of *domestic* animals that we can depend upon to give progeny in no way inferior to the parents. The breed or strain is developed. Dr. Phillips writes me that the Italian queens we get from Italy are variable, and have to be bred in this country for improvement!

Can we ever expect to get the *best* results by using queens that have been sent by mail, sometimes across the ocean and continent? Mr. Ed Miles, of the Miles Honey Co., writes me:

> "Let me whisper in your ear, if you *ever* find a queen that has gone through the mails that will produce a colony of bees superior to our best 'mixed bees,' you will have found something I never have, and I've purchased quite a few queens through the mail."

I'd like to quote his whole letter, as he is intensely practical—and we are "scrapping" all the time.

Finally, while Mendel discovered some wonderful things about plants and flowers, it was left for later students to show equally startling results with mice and the higher vertebræ, and it is now practically demonstrated that his laws will apply to the human race as well. Several years of eugenics and Mendelism makes it seem almost certain that in the latter we have a solution of the fundamental problem of heredity, and I want to apply it to the bees.

Buck Grove, Iowa.

"The Amateur Bee-Keeper"

This is a booklet of 86 pages, written by Mr. J. W. Rouse, of Missouri. It is mainly for beginners—amateur bee-keepers—as its name indicates. It is a valuable little work, revised this year, and contains the methods of a practical, up-to-date bee-keeper of many years' experience. It is fully illustrated. Price, postpaid, 25 cents; or with the American Bee Journal one year—both for $1.10. Send all orders to the office of the American Bee Journal.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Management for Increase.

1. To increase in spring would the following be a good plan: Take from a populous colony that you think will swarm the coming season, one frame of brood with bees and queen adhering, and place this frame in a hive-body filled with empty frames or foundation, placing it underneath the original body with screening between the two; supply the old brood-body on top with a new queen in a cage, so arranged that the bees will release her in 3 or 4 days. The top body should have an opening for egress and ingress.

By this means I should think that nearly all the field-bees would go in the new body underneath, and the remaining bees and brood in the top story should readily accept the new queen, and the two combined by their mutual heat would rapidly develop. In 3 or 4 weeks the top colony could be removed to a new stand, thus adding more strength to the bottom colony. I think it would also be well to place the Alexander feeder under the bottom colony and by thus feeding stimulate and help rapid increase.

2. If feasible, would you advise that the opening to the top section should be on the same side, or opposite to the lower section? MISSOURI.

ANSWERS.—1. The plan ought to work all right, only there is a possibility of snags. If you operate early in the season, the colony will not be very strong and the weather not very warm, and the division of forces will retard rather than advance progress. As a rule it is not wise to think of dividing before about the time of harvest, and at that time you will have supers in the way. Better not try it on a very large scale.

2. Let both openings face the same way. Then when you take away the upper story the field-bees that return from it will the more readily find the entrance of the lower story.

Queen-Cells and Re-queening with Cells, Etc.

1. What do you consider the best method of getting choice cells built? I will say that I have always removed the queen and brood from a strong colony and fed them 3 days before giving cells. What I wished to know was whether there is a method of producing better cells than the above will.

2. When requeening with cells in a cell-protector, is it safe to place the cell in the hive at the time the queen is removed?

3. I want to thank you for the questions you have answered for me. I have troubled you a number of times. I have learned much from your question-box. OHIO.

ANSWERS.—1. I don't know. All things considered, I think I would prefer the plan given in "Fifty Years Among the Bees." Briefly it is this: Give to your best queen a frame with small starters of foundation. In a week or less the frame will be partly filled with comb and this will be filled with eggs and young larvæ. (If the colony be very strong, there is danger of too much drone-como in your frame. In that case it is well to give 2 or 3 such frames.) Trim off the edge of the comb so as to leave very few or no eggs. Put this comb in the center of a strong colony from which you have just taken the queen and one frame of brood. You have left all the old frames of brood but one, and of course the bees can build cells on all those old combs if they want to. But they won't want to. That tender virgin comb suits their taste so well that cells will be built upon it entirely, or almost entirely. Of course you don't need to use any wild cells. With their hive left full of brood I fancy the bees may be in a little better heart than if all brood be taken away. At any rate I don't believe it is possible to get better cells by any other way, and the trouble is very little.

2. The cell is supposed to be safe at any time, queen or no queen. It is covered except at the extremity, and bees tear into cells at the side and not at the end.

3. If others think the same as you about the answers, I suppose we ought to thank you for sending in the questions, for without the questions there would be no answers. Allee samee, the kind words of appreciation I get from you and others do me a whole lot of good, and make me try to make the answers just a shade better in the future than they have been in the past. So send along your questions.

Finding Queens with Carbolic Acid—Virgin-Queen Management.

1. In the January number of the American Bee Journal, I have read with much interest the item of Mr. Geo. H. Redford, on how to find the queen with carbolic acid. If this works all right without injuring any bees, what a blessing for the bee-men, as it is sometimes impossible to find the queen when the colony is very strong. What a blessing for the men that need bees by the pound. Now, I would like to know how strong must be the carbolic acid—is 10 percent all right?

2. What becomes of the drones when all the bees are in the screen box? Will they assimilate with the queen below?

3. I would also like to know how long a virgin queen can be kept in a Rauchfuss cage without injuring her welfare as a breeder,—virgin to be kept in the upper story of a hive, queen-excluder between the two bodies, and reigning queen down below.

4. I have in my mind a plan that would be like this: June 1st I would insert a frame with full foundation in my best breeding hive; then 3 days later I would put another colony on top, put 2 brood-frames with brood and bees, and the 3-day old foundation comb between the brood, and separate the 2 bodies with a queen-excluder, and keep the queen below. I suppose that the bees will go right at it and build queen-cells on that comb foundation. In about 10 days the queen-cells should be capped (June 13th). Now I would cut all the ripe queen-cells, put them in Rauchfuss cell protectors (with candy in the hole, so that when queens emerge they have something to eat), and hang the cells in Rauchfuss cage in a Hoffman frame in the same hive-body for further use. After all the queens emerged, sometimes by June 15th, the white clover will be blooming, and now will be my time to shake all my colonies for the comb-honey harvest, the usual way, to put a new hive with full foundation on the old stand, and the beeless brood on a new stand.

Now I would requeen all my colonies by killing all the queens, and in the evening of the same day, let a virgin run in each of these queenless hives where there is no brood, only supers on top The rest of my virgins I would put in each of these beeless-brood hives I have shaken off, and if I have any virgins to spare, I would keep and feed them in Rauchfuss cages until I am sure that every queen is safely introduced, and is also laying after she is mated. Do you think this will work all right, or will it reduce my honey crop?

Or do you think to do the same plan I have mentioned after the honey-flow is over, the end of July or the first part of August? But I have heard that the best queens are reared in the honey season, so I would prefer the first plan if possible.

5. To put the virgins in these (broodless) beeless hives, but full of brood that I have shaken off, must I leave some bees in the hives for the virgins, or will bees hatch out fast enough to take care of the virgins? I intend to put those virgins directly in without a cage.

6. When shaking a colony into a hive with new foundation, is it necessary to put in one frame of brood with queen to hold the bees, or will it work just as well to put in only foundation and no brood at all? WISCONSIN.

ANSWERS.—1. I think it is a fair supposition that Mr. Redford uses the acid undiluted. He puts 3 or 4 drops on top of the fuel in his smoker. So few drops as that would hardly have enough driving power if he used a 10 percent solution. A 10 percent solution might do to moisten a cloth with which to drive bees, but 3 or 4 drops in a smoker is quite a different thing.

2. The drones will be caught with the queen. If very many in number, they will of course make some trouble as to seeing the queen.

3. I should say the shorter the time of such confinement the better. Still I've had a virgin confined 2 or 3 weeks without seeming to be hurt by it. At other times I've found her dead in less than that time.

4. You can tell best how a plan will work out by putting it actually to the test; but it may be well to mention some things in which there may be variation from the program you have laid out. June 1 you put a frame of foundation in your best colony, and you expect to find it filled with eggs 3 days later. You may not be disappointed, and again you may. The queen may lay in that frame in less than 24 hours, and she may not lay in it until a week or more has passed. I remember putting in such frames and in some cases the bees plumped them full of honey, just as if they supposed they had been put in for surplus honey. But suppose the queen begins to lay in that foundation within an hour after you have put it in the hive, although such a thing is exceedingly unlikely. Then 3 days later, which will be June 4 (not June 3), you put that frame of foundation with its eggs into an upper story over an excluder, and you suppose the bees will go right at it to start queen-cells in it. Very un-

likely. Bees rarely build post-constructed, or emergency, cells over eggs. They prefer larvæ to eggs, and as there are larvæ in the combs of brood on each side of the foundation-frame, those larvæ would be what they would use *if* they should start cells right off. However, they are not likely in any case to start cells so soon over the excluder, so long as there is a laying queen under it. I don't know for certain what is the average, but so nearly as I can remember I *think* they will be spry enough if they start cells in 3 or 4 days.

Before we get any farther, however, it may be well to mention that there is a good deal of danger that you will be disappointed as to the number of cells started. A good laying queen is below the excluder, and the bees are in no great panic about getting the cells started, and what's more, they are not greatly impressed with the need of starting a large number. So there may be only one or two started, and that would hardly suit your purpose.

Suppose, however, there is no hitch in the program, and that the queen begins to lay in the foundation within a minute after it is put in the hive, and the bees start cells within a minute after it is put over the excluder. In that case you would not have virgins emerging from their cells June 15, as you figure, but June 16 at the very earliest, for 15 days is as short a time as you can count on from the laying of the egg to the emerging of the virgin. With all the chances for delay, June 20 might come nearer the mark. This matter of delay, however, is not a thing of vital moment, but the probability of a small number of cells and the possibility of none at all may be serious. On the whole, you will do well to put that frame of foundation with its eggs into the center of a strong colony from which you have removed the queen, and then you will come pretty close to the plan given in "Fifty Years Among the Bees," which plan I have followed with great satisfaction.

You will now shake a swarm, kill the queen, and in the evening run in a virgin. If the virgin be young enough, she will not be molested, but the loss of the laying queen when there is not as yet very much done in the way of starting a brood-nest will have a discouraging effect on the bees, and may cause an unpleasantly large number of colonies to desert their hives.

Some of the virgins will be lost on their wedding flight, but even if there be no such loss, it will be 8 to 16 days before they will be laying, meaning the loss of just so much in the strength of the colony which may mean a serious loss in the honey-crop.

If you wait till later you can still rear your queens without interfering with the honey-crop, unless the harvest should be very late.

5. The virgins may be all right without any bees, but the loss of brood is to be considered, and if a cold night should come it may be very heavy. Even with good weather it is better to leave enough bees to feed and keep warm the young brood.

6. Better have the frame of brood. Without it there will likely be cases of desertion. But some think it better to take out the frame of brood after 3 or 4 days.

Bees Robbing Weak Colony.

When a person goes into his apiary and finds bees robbing out a weak colony, what is the best thing to do? I just found the bees robbing out a weak colony, and I did not know what to do.

Arizona.

Answer.—Just what is best to do depends upon how weak the colony is, what kind of a queen it has, etc. If it has a good queen, and has frames enough to cover 3 or more frames of brood, then it is worth while to make efforts to save it. If the robbing has been going on only a little while, it takes less efforts to stop it than after it is well under way. Closing the entrance so as to leave room for only one bee to pass at a time may be enough. Painting carbolic acid about the entrance will help. Indeed, enough carbolic at the entrance will stop a pretty bad case, but the carbolic must be renewed as often as it loses its strength. A pretty good plan is to pile hay or straw in front of the hive and a little hay at each side, making it as high as the top of the brood-chamber, and then keeping it well drenched with water. Perhaps better than either of these is to take the hive down cellar, keeping it dark, and leaving it there two or three days. But when you take the hive from its stand, be sure to put in its place an empty hive similar in appearance to the one removed. Unless you do this, as soon as the robbers find a vacancy where their prey was, they will think they have made a mistake as to the hive, and will pitch into one of more of the neighboring hives. If they find an empty hive in the old place, they will think it has been all robbed out and will give it up.

In probably the majority of cases, unless the robbing has been started by some foolishness on the part of the bee-keeper, there is something wrong with the queen and the colony is not worth saving. In that case it is best to do nothing. Let the robbers go on and clean out the hive, and when they are done they will quit, whereas if you meddle in any way there may be some danger that it will start the robbers at some neighboring colony.

Plans for the Prevention of Swarming

What are the Alley and the Swarthmore plans to prevent swarming? California.

Answer.—I don't know. If there is any special plan of swarm-prevention called the "Alley plan" or the "Swarthmore," I do not remember to have seen it.

Getting Brood-Combs Drawn Out

How and when is best to have brood-combs drawn out, or made from full sheets of comb foundation? Kansas.

Answer.—Give such frames of foundation any time when bees are gathering more than enough honey for their daily needs, if you think they will not stop gathering before they have time to finish the combs. Of course, that's as much as to say that the very best time is at the beginning of a harvest that you have good reason to expect will last two weeks or more. A strong colony, of course, will need less time than a weak one.

Sweet Clover—Cleome—Rape—Minnesota Bee-Country

1. How far north and south will sweet clover thrive and do well? Would it do well in cut-over timber lands?

2. Where can the seed of the Rocky Mountain Bee-Plant (*Cleome integrifolia*), that Dadant in "First Lessons in Bee-Keeping" refers to, be secured? Would it be a good thing to plant here?

3. Has rape any honey-value to make it worth planting for bees alone? When should it be planted to yield the most honey?

4. What kind of a bee-country is northern Minnesota going to be where it has been logged off? Does it offer any better possibilities to the bee-keeper than the Ozark country of Arkansas? Iowa.

Answers.—1. I suppose if sweet clover may be considered as having any native place it is Bokhara, in Asia, about 40 degrees north of the equator. At any rate, it is called "Bokhara clover," and years ago that was the chief name for it. According to that, one would suppose that it would be at its best on the parallel of 40, which runs centrally through Ohio, Indiana, Illinois, Utah, and Nevada. But it does not seem to be very limited as to its habitat. I think it succeeds about as far north as bees are generally kept. Mrs. Lucinda Harrison failed to make it grow in Florida, but I have an impression that it succeeds as far south as Florida, in Texas. It ought to do well in cut-over timber-lands.

2. Leading seedsmen should have it, or be able to get it for you.

3. Rape is a fine honey-plant, but neither that or any other plant will pay to sow for honey alone, unless it be on waste land where it will take care of itself. Spring is probably as good a time as any to sow rape.

4. It ought to be good. I don't know how it will compare with the Ozark country of Arkansas.

Caging Queens and Making Increase

1. In "A B C of Bee Culture," Mr. Somerford says in speaking of increase, page 310, to "cage queens in all your fancy stock." Please explain.

2. Can you cage a queen and put her in a colony having a laying queen? If so, how long can she be kept there? California.

Answers.—1. He says, "Remove the queens or cage them in all your fancy stock." That is, remove or cage them in those colonies you want to start queen-cells, since a queenless colony will be sure to start cells. It is well to understand, however, that a colony with its queen caged is not so certain to start cells as one which has no queen in the hive, nor is it likely to start so many cells.

2. Yes, and she may remain weeks, or she may be dead in a few days. She will be more sure to remain in safety if the cage is provisioned than if she has to depend upon the bees to feed her.

Preventing Swarming—Half-Dead Bees

1. If I put on the supers before the bees swarm, will that keep them from swarming?

2. Some of my colonies are now (Feb. 8) carrying out quite a few bees about half dead. What do you think is the cause of it?

Texas.

Answers.—1. Sometimes it will; generally it will not. Giving plenty of room is one of the things that helps to prevent swarming, but it is only a help, and not a reliable preventive.

2. It may be that the larvæ of the wax-moth, or "wax-worms," as they are called, have made their galleries along the cappings of the sealed brood, mutilating the young bees in the cells, which are then dragged out by their older sisters.

Feeding Thin Syrup

1. How thin a sugar syrup may be fed to bees without danger of spoiling after taking into the hive?

2. Is there any ingredient that may be put into the syrup to obviate the difficulty? and are there conditions as to weather, or otherwise, affecting the matter? Virginia.

Answers.—1. Early in the season, when bees are flying daily, it will do no harm to feed them syrup just as thin as they will take it, say one part sugar to 10 of water. And the same is true until fairly late in the season. As the weather begins to be cool toward fall, the syrup must be given thicker and thicker, lest the bees do not have time to evaporate it sufficiently, and as late as November it will not be well to feed a thinner syrup than 2 parts sugar to one of water, and 2½ of sugar to one of water is still better.

2. The weather does not make very much difference, although the drier the weather the less danger of too much water. But I don't know of anything that you could put into the syrup to counteract the effect of too much water, unless it would be a sheet of blotting paper, and I'm afraid that would hardly answer.

Cleansing Beeswax—Comb and Extracted in Same Super

1. I have about 40 pounds of beeswax which I rendered from old combs that I intend sending to the factory to be worked into foundation. The cakes are dirty. How can I remelt and clean the wax?

2. Can I use shallow extracting frames in

the regular dovetailed super with part of the space filled with comb-honey sections, and produce both in the same super to good advantage? WISCONSIN.

ANSWERS.—1. The chief secret of getting the impurities out of wax lies in keeping it liquid a long time so that the impurities will settle to the bottom, or, as it is generally expressed, letting it cool slowly. Melt the wax in a vessel of tin, or something else than iron, having some soft water with it. When heated it may be allowed to cool in the same vessel, or the wax may be poured into another vessel The larger the body of wax of course the longer it will be in cooling, and so the better chance for the impurities to settle. A considerable quantity of water helps also to keep the whole body warm longer. Cover over closely in any way you like, and you may also wrap something around the whole to retain the heat. If it be set on a cook-stove at night with a slow fire, and the fire allowed to die down, that will help. All of these things, you will see, are for the purpose of keeping the wax hot as long as possible. When cold, of course the dirt is to be scraped off the bottom of the cake.

2. Yes, some think this a desirable thing to do. Just how much advantage there may be in it depends upon your market. If you can dispose of extracted honey to good advantage then the plan is advisable. If you have no market for extracted, and a good market for comb, then the plan is not advisable.

Hive-Ventilation in Outdoor Wintering

What is the least ventilation that will suffice for a strong colony outdoors during freezing weather?

The hive entrances of several of my colonies became blocked with solid ice during a very cold time suddenly following a day during which the water and soft snow collected upon the alighting-boards, and I would use a lower chamber with additional ventilation high up, if too large a hole is not necessary. VIRGINIA.

ANSWER.—For a strong colony an entrance 8x¼, 4x½, or any other size equivalent to 2 square inches is little enough. Your idea of a lower story with an entrance high up is good. You might do worse than to bore a small hole in the front of your present hive, half way between bottom and top. So long as the entrance is clear to the bottom, no matter what size, there is always some danger of its being closed if there comes a damp snow to clog the entrance and then freeze. I suspect you would be well pleased with bottomb-boards 2 inches deep. They're great in summer-time used with a bottom-rack to prevent building down, and in winter you could close the lower part of the entrance and have the opening nearly 2 inches from the bottom. That would meet your difficulty, and also get rid of the danger of having the entrance clogged with dead bees.

Caging a Queen in Own Colony

How long can a queen stand confinement caged within her own colony without injury? My experience in that line is not sufficient, as I wish the information from *different localities* for the benefit of bee-men under present conditions here.

CALIFORNIA.

ANSWER.—I've had a large experience with queens thus caged for 10 days, and it seemed to do them no harm. Beyond that my experience is limited. In a few cases they may have been caged 3 weeks. Will others, especially Californians, give us their experience?

Preventing Honey-Granulation

1. I am surprised at the people in general here in San Francisco in regard to pure honey. How hard it is to convince them that honey will granulate from exposure to the cold. Nine-tenths of the people do not believe that they get pure honey; as they are so accustomed to being humbugged they expect it at every corner. I tell them the pure food law does not allow any one to misbrand or mislabel goods pure unless they are really such. I have competitors telling their customers their honey will not granulate. I think they use something to keep their packages from granulating. Still they label it "pure" honey.

2. Can vinegar be used to advantage without spoiling the flavor? If so, how much to the gallon? In the October American Bee Journal, glycerine was mentioned as an article to keep honey from granulating.

I have much trouble in this matter with most people who do not know or seem to care about pure honey. They say I put too much sugar in it! CALIFORNIA.

ANSWERS.—1. If there is really adulteration in the case, the pure-food authorities might be set on their trail. But the federal authorities have nothing to do in such a case unless the goods in question are shipped from one State into another. Adulterated goods that do not go outside the State are only subject to State laws.

2. It is not advisable to try anything of the kind. Even if it would act satisfactorily, there would then be some ground to accuse you with tampering with the purity of your honey. Possess your soul in patience, and in time you will come out ahead. Patiently explain what granulation is, and some will learn to prefer the granulated honey, while others will, in response to your instruction, learn to liquefy properly the candied article.

An Unusual Queen Experience

In the spring of 1911 I had an experience with a queen in one of my hives that I can not account for. The results were so strange that I would like to know if any up-to-date bee-keeper ever had the same experience.

Last March I put my bees on the summer stands, and while taking them from the cellar I noticed that one colony was very quiet, so when a warm day came I opened the hive and found that there were not over 40 or 50 bees with the queen. As there was plenty of honey in the hive, and not having any use for the queen, I closed it up. About 8 days later I again opened it and found the queen alone on a comb. Thinking that the bees were in the field I waited a half hour, but as oone returned I closed up the hive-entrance to prevent the other bees robbing, and left her.

About 10 days later, having use for the combs, I opened the hive. You can imagine how surprised I was when viewing the combs to find the queen still there as quiet as if the hive were full of bees. I did not have the heart to kill her, and in the end I went to a strong colony and took a frame with all the bees and placed it in the new hive with the lone queen. On the fourth day I opened it, expecting that they had killed the queen, or returned to their own hive, but judge my surprise when I found the queen all right with a small batch of brood, which, by July, was as strong a colony as the rest. Now, this may be a common thing to some of the older bee-keepers, but I thought that a queen could not live alone. ILLINOIS.

ANSWER.—You have had a unique experience. At least I never heard of such a case before. To be sure, it is the usual thing when a colony dies for the queen to be the last to succumb, but to have the queen live all alone as late as in April for 10 days is what you will probably never experience again.

Keeping Bees from Objectionable Places

Referring to the editorial on "Salt and Vinegar in Syrup," in the January issue of the American Bee Journal, can you tell how salt should be used to keep the bees from such objectionable places as Editor Herrod mentions when no syrup is fed? I have noticed bees at such places at different times during the summer months when the bees were gathering their own stores, but, of course, it would not be feasible to feed syrup the year around for the sole purpose of giving the bees salt.

Perhaps you know of some other way of keeping the bees from these places. If so, any information you may give will be greatly appreciated. NEW YORK.

ANSWER.—The first question to be answered is: What is the attraction for the bees at these places which are objectionable to bee-keepers? If we know that, there is a fair chance to offer a greater attraction elsewhere. For a long time it was generally held that salt is what the bees were after. In that case the thing to do is to offer salty water in an unobjectionable place. Latterly, however, there is a growing belief that the salt has little or nothing to do in the case, but that warmth is the attraction. The bee prefers warm water, and very likely prefers to be in a warm, sheltered place while it is loading up with water. That gives us our cue. Give the bees water in a sheltered, sunny place, where the water will be comparatively warm, and as David Harum says, "Do it fust." For bees are great creatures of habit, and if you offer them water in a desirable spot before they get in the habit of going elsewhere it will be a great point gained.

Having chosen a desirable watering-place, I know of no better way to give the water than to give it in a pail, tub, or other vessel, with a layer of cork-chips on the surface of the water. Any grocer who gets grapes in cold weather in kegs will have these cork-chips to throw away, for they come as packing for the grapes. A layer something like an inch thick or less will answer. They will last for a whole season, but as the season advances they will become soaked so that it will be well to renew them, or at least to add some fresh chips. There must not be so few chips that the bees will drown, nor so many that the bees can not easily reach the water. Some keep the water warm by means of a lamp.

If, however, the bees have already made a start at some objectionable place, and that place is known, it may be possible to drive them from it by a sprinkling of a solution of carbolic acid.

If you think the bees want salt, then add salt to the water you offer.

Caucasians and Carniolans

Is the Causcasian bee a bad one to swarm? Is the Adel bee a sort of Carniolan bee, and can it be kept in an 8-frame hive? What kind of a cross would it be? Is it true that Carniolans are bad swarmers? ILLINOIS.

ANSWER.—The Caucasians have not the reputation of being great swarmers, but the Carniolans have. There is no such race as Adels. The word "Adel" is a German word which Germans spell "Edel," and the word means noble or excellent. So any one may call his bees Adels, whether they are black or yellow; only, of course, it will be a misnomer if applied to poor bees.

Fastening Foundation in Brood-Frames

In using full sheets of foundation, even "medium brood" happened to warp, and after the combs were finished they showed an uneven surface, although they were put in true and straight and fastened on all sides, except below, with melted wax. To avoid this in the future my plan is to fasten a ½-inch strip in the middle of a Langstroth frame, running from top to bottom of the frame. The foundation comb then is cut crosswise in two, and fastened the same way as full sheets are. The combs being thus supported in the middle would likely remain more even and would not sag as they do when fastened in the usual way.

My way of fastening foundation in brood-frames is simple. I take a board larger than the frame, and on this board I fasten another board which goes inside the frame, and thick enough to occupy half the space of the frame. An empty frame is put on this board and thus the foundation sheet will come right in the middle of the frame. I use a spoon to pour on the melted wax.

Would you advise me to put a strip in each frame as described above? INDIANA.

ANSWER.—Your scheme will work all right if you do not object to the wooden strip in the center of your frame. Some would prefer to use splints or wires. Another plan is to paint the upper part of the foundation with melted wax.

Management of Increase, Etc.

1. I want to increase my colonies without natural swarming, when they are strong in bees, and I want to have 7 or 9 frames of brood next May. I will try to build up with my first colony, set the hive off the stand, replacing a hive filled with frames having full sheets of foundation. Then I want to find the queen of the colony just taken from the stand, and take the frame of brood she is on with all adhering bees, and put it in the center of the new hive, having first taken one or two frames of foundation to make room for the easy introduction of the frame of brood, bees and queen. I place a queen-excluder over a new hive, and set the old colony on top. I want to get queen-cells reared in the top. Five days later I intend to set the old (or top) hive on a new stand. Will queen-cells be reared in the top? I will feed them properly, when they will be ready in countless numbers to enter the field of sweets.

2. I want to make a few nuclei next May or June. I want to take one frame of brood containing worker-eggs, some queen-cells, and bees just crawling out of their cells, without a queen, and put it into an empty hive, and put a board in the middle to make the smallest room for the baby colony. Is it a good plan? I intend to take some frames of brood from other colonies and shake or brush down young bees to give more bees to the nuclei, at noon. Can queen-cells be reared safely?

3. Can I put fresh snow over the entrances of the bee-hives when the coldest, windy days come?

4. If queen-cells appear in any bee-hive, can I cut them off at all, as I do not want swarms?

5. Will the colony be strong in numbers if queen-cells are cut off? Should I give more room? Will they build up combs quickly and gather honey fast? INDIANA.

ANSWERS.—1. They may start cells and they may not. You will be more sure of cells, and will have more cells if you take away the queen for a week.

2. If I understand you rightly you will have only one frame for the nucleus. At least you should put a frame of honey, or partly filled with honey, on each side of your frame of brood. Then if you add enough young bees, as you suggest, you can rear good queens provided the queen-cells are advanced enough so the young queens are about ready to emerge. If the cells have not been sealed very long when given to the nuclei, you can not count on good queens.

3. It will be all right if the snow is dry. If the snow is wet and packs together it may smother the bees.

4. If you cut out all queen-cells it will delay swarming. Generally, however, the bees will start cells again, and if you keep cutting them out the bees will sometimes swarm without a queen-cell in the hive. Sometimes, however, cutting out the cells will prevent swarming entirely.

5. Cutting out cells will not interfere with the strength of the colony, nor with building nor storing.

REPORTS AND EXPERIENCES

Last Season Good for Bees

Last season was a good one for bees. I sold $14 worth of honey from 2 colonies, besides what we used ourselves, and also increased to 3 colonies. So far this winter I have lost but one colony out of 5. Last winter I lost 3 out of 5. Bees were flying for the first time today since December, 1911.

Riverside, Iowa, Feb. 10. WM. ZAHS, JR.

Heavy Loss of Bees in Wintering

I don't want to be pessimistic, but, in my opinion, we will have at least a 50 percent loss in bees in this locality this winter. I lost one colony, but I got to the others in time to save them. Farmer bee-keepers with 5 or 10 colonies each have lost practically all; some had plenty of honey, but arranged so that the bees could not get over the top of the frames. J. W. SWAILS.

Lebanon, Ind., Feb. 26.

No Snow—Short of Stores

Bees are doing fine, having cleaned out their hives in good style. We have not had any snow this winter. Bees have been out every day the last 4 weeks. Last season the honey-flow stopped Aug. 18th—no more honey after that, so the bees filled up their brood nests with bee-bread, and some colonies are losing quite a lot of their bees. I am feeding those of mine that need it.

Jensen, Utah. G. W. VANGUNDY.

A Terrible Winter in Minnesota

This has been a terrible winter thus far, and the lowest known thermometer in the 41 years that I have been in Grand Meadow. For 13 days the mercury did not get up to zero, and for 54 days it did not get up to the freezing point.

I think that ¾ of all the bees have died out here during the last 2 years. There has been no white clover honey for 2 years, and I have not taken 10 pounds of surplus honey during the last 2 seasons. It is very discouraging; but "never say die."

C. F. GREENING.

Grand Meadow, Minn., Feb. 20.

Improving the Honey-Bee

Among the many articles which I read on this subject, that of Arthur C. Miller, on page 50, seems the best for me. For some years I practised on a small scale the plan which he describes, and I have found that it works fine. My experience is, that by breeding from the best will soon improve an apiary at least 50 percent. For example, one colony stored 75 pounds of surplus honey in 1911, and went into winter quarters with an abundance of stores, and several others were of the same quality in storing honey, all bred from my best queen. Some other colonies which were just as strong were far behind in storing honey. I don't know why this is, but I think it pays well for every bee-keeper to work a little in this direction. A prolific queen in a strong colony during a honey-flow will produce eggs for good queens if such a colony is made queenless. I have tried this with good results, but will not work well during a honey-dearth.

BRO. ALPHONSE VEITH.

Valued at Twice Its Cost

I would not discontinue the American Bee Journal for twice its cost. If at any time you do not receive remittance in good time notify me; but continue the Journal until notified to discontinue. R. H. LINDSAY.

Aylmer, Ont., Feb. 18.

Rather Severe Winter on Bees

It has been a rather severe winter on bees here. There will undoubtedly be heavy losses among those wintered outdoors. So far I have lost none, but some of the nuclei will hardly stand it till the blossoms open.

Bellevue, Ohio. H. G. QUIRIN.

Prospects Better for 1912

We have had bad bee-keeping here for 3 years on account of drouth. There was but very little surplus honey last year, as most of our bees died. I think the prospects are better for this year. Honey is 25 cents per pound here. CATHARINE WAINWRIGHT.

Tilton, Iowa, Feb. 22.

Grafting Wax

Take 4 pounds of rosin, one pound of beeswax, one pint of linseed oil. Put in an iron pot and heat slowly When all is mixed pour in cold water and then work it by pouring in until it is light color, but put oil on the hands before working it. Lay it away in a cool place until you need it. It will never run. If the day is warm when you are grafting, better moisten your hands with water occasionally, and work the wax around the graft. LOUIS WERNER.

Edwardsville, Ill.

Rearing Brood—Sawdust for Pollen

We had an average flow of honey in the late summer and fall of 1911, and our bees had abundant stores when they went into winter quarters. We have had a very cold and disagreeable winter, but in spite of all the snow and bad weather my bees have already commenced rearing young bees. The weather has been pretty warm for the last few weeks, during the day, but snow still shows up at present. Yesterday I opened one of my hives to see if the bees were short of stores, and found young brood already sealed.

Say, did any one ever see bees use sawdust for pollen? Last spring I saw them flying around the sawdust pile at a sawmill near by. I began to watch, and found they were working the finest part of the dust on their legs just as though it were pollen. This spring I have seen them do the same thing. It was oak sawdust, so they must have wanted it for a substitute for pollen.

GEORGE GUNTHER.

Cushman, Ark., Feb. 24.

Coldest Weather in Years

My bees did very well last year, but the most they gathered was fall honey and yellow in appearance. I am wintering my bees on the summer stands—the first time in 20 years and it has been the coldest winter since Jan. 1st for I don't know how many years. JOS. HENTRICH.

Granton, Wis.

Good Results in 1911

I have only 2 colonies of bees I bought in the spring of 1910. I had not a single swarm, but more honey from a single colony than any other man around here. Last year was considered a poor one, but I got over 200 pounds of comb honey from 2 colonies. I commenced feeding as soon as the bees came out of the cellar, and when the blossoms came I had a good, strong colony of bees. I put on the first super when the trees were in bloom, and kept putting on supers when they were about half full so the bees had always plenty of room. For feeding I give one-half sugar and one-half water, and then had a box with ground corn standing in the garden. I used flour, too, but the bees would not take the flour, but were working in the ground corn—more bees there than at the hive on a warm day.

Ogden, Iowa. M. H. ROSACKER.

The King Bee-Keeper—Dry Spell

Mr. S. M. W. Easley, of this Ventura county, is 70 years old, and one of the pioneer bee-keepers of this State. He has kept bees for 53 years, and has harvested many carloads of honey in his time. In 1884 he had the largest crop of honey that ever had been taken up to that time. He started that season with 560 colonies of bees, increased them to 1250 colonies, and extracted 86 tons of honey; and had it not been for the death of a son during the honey-flow he would have added many more tons to this amount. The location he had at that time has but a small amount of the sages growing now, as the plow, fire, and cultivation have wiped out the greater part of the forage.

We are having the worst spell of dry weather we have had for many years, and unless we have rain soon many apiaries will starve out. The loss of bees will be great.

M. H. MENDLESON.

Ventura, Calif., Feb. 12.

Connecticut Convention.—The annual meeting of the Connecticut Bee-Keepers' Association for the election of officers, etc., will be held Saturday, April 13, 1912, at the Y. M. C. A. Building, Hartford, beginning at 10:30 a.m. The matter of forming a branch of the National Association will be discussed. Good speaking assured.

JAMES A. SMITH, *Sec.*

Hartford, Conn.

"Scientific Queen-Rearing"

No other book compares with this one written by Mr. G. M. Doolittle. He is an expert in the business. It tells just how the very best queens can be reared. Bound in cloth. By mail, $1.00; or with the American Bee Journal, one year—both for $1.60. In leatherette binding, 75 cents, postpaid; or with the American Bee Journal one year—both for $1.25. Send to the American Bee Journal.

Plants True to Name.—Buyers of nursery plants are confronted with the problem of securing the varieties of fruits and shrubs they want. True, it is not difficult to find the names of the varieties desired in the catalogs. But after carefully unpacking, planting and cultivating, too often only disappointment awaits us at fruiting time. Because of these experiences with unscrupulous growers of nursery plants, the purchasing public has rightfully grown suspicious. The result is that they have placed a premium on the man and his stock whom they can trust implicitly. W. F. Allen, of Salisbury, Md., has 120 acres planted to strawberries alone, in which there are over 100 varieties. Besides strawberries, Mr. Allen grows raspberries, blackberries, gooseberries, currants, grape-vines, California privet, and other small shrubbery on a large scale. His advertisement appears in our columns, and we suggest any one wishing to buy any nursery plants will do well to write for his catalog. He guarantees every plant to be true to name, and sends a booklet on cultural directions *free* with each order. Please mention the American Bee Journal when writing.

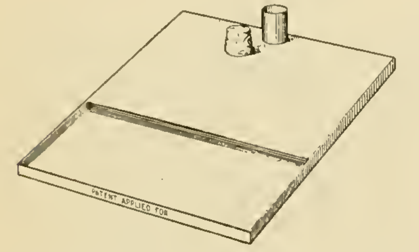
◆

Bee-Supply Catalogs received at this office are as follows:

G. B. Lewis Co., Watertown, Wis.
Arnd Honey & Bee-Supply Co., 148 W. Superior St., Chicago, Ill.
A. I. Root Co., Medina, Ohio.
Dadant & Sons, Hamilton, Ill.
F. A. Snell, Milledgeville, Ill.
H. S. Duby, St. Anne, Ill.
A. G. Woodman Co., Grand Rapids, Mich.
August Lotz & Co., Boyd, Wis.
Marshfield Mfg. Co., Marshfield, Wis.

◆

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and ¼ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.



In case of foul brood you can feed medicated syrup and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.

Some of the many good points of this Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.

I am in position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each; 25 for 15c each; 50 at 14c each; 75 at 13c each, or 100 for $12. If ordered by mail, add 10c each for packing and postage.

Address all orders to—A. H. OPFER, 117 N. Jefferson St., Chicago, Ill.

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Easy to Use.—The Pilling Milk Fever Outfit and the Pilling Garget Outfit should be on hand now as the time is at hand when those accidents of parturition—milk-fever and inflamation of the udder (garget)—are apt to occur.

PILLING CATTLE CASE
Nº 2
G.P.PILLING&SON CO.
PHILA.PA.
ABSORBENT COTTON
SOAP
Easy to use

If you save one cow by the use of the Pilling air-treatment for milk-fever, or restore one udder to full secretion that otherwise would make good cow worthless, by the use of the Pilling Garget Remedy, you will have saved enough money to purchase the instruments and remedies needed on a dairy farm for the rest of your natural life. They are *easy to use, easy to buy;* they are not expensive—*easy to preserve;* they last for a good many years. Altogether an easy way to make money—let the Pilling people help you to save it.

The Pilling Cattle Case No. 3 contains not only the Milk Fever and Garget Outfits, but several other "easy to use" cattle instruments needed by every dairyman and breeder.

Write G. P. Pilling & Son Co., 23d and Arch Sts., Philadelphia, Pa., for their free books on "Easy to Use" cattle instruments. Write now, as you may need some of these goods sooner than you expect. Please mention the American Bee Journal when writing.

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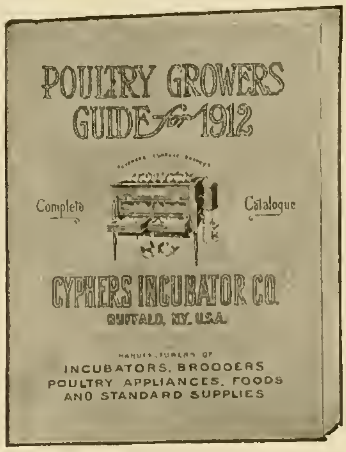
Have You Received Your Copy of This Book?—This book is being mailed free to all interested in poultry and egg-production for profit. We believe it is one of the best ever published on the subject. You should not fail to have a copy. It tells all about Cyphers Incubators and Brooders—but it is so much more than a catalog that the Cyphers Company calls it "Poultry Growers Guide for 1912." And the name fits the book perfectly. In addition to complete description of all the Cyphers styles and sizes of incubators, brooders, as well as over a hundred standard poultry supplies manufactured by the Cyphers Company—this great book contains eight chapters which are almost priceless in their value to the beginner or old-time poultry-raiser. Even those eight wonderful chapters are not all you will find in the book. Read the opinions of experts on incubators and brooders. Read about Cyphers Company Service—the greatest help to bigger poultry profits since the incubator was first invented. Read about the $1000 Cash Prize offer. Read about—but get the book. It is bigger than any issue of the American Bee Journal. It weighs a pound. Yet it is gladly sent *free* to any of our readers who are interested. Simply write a postal card to the Cyphers Incubator Co., Dept. 83, Buffalo, N. Y. The book will come at once.



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FOR
Goldens, Caucasians, Carniolans, 3-b'd Italians

Untested, $1.00; Tested, $1.50.

Write for prices in large quantities. "Right Treatment and Quick Service" is our motto. Address as above, or

JOHN W. PHARR, Propr.
BERCLAIR, TEXAS.

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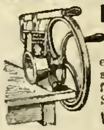
Crown Bone Cutter



FEED your hens cut green bone and get more eggs. With a **Crown Bone Cutter** you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.
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Best Made Lowest in Price

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Italian Bees, Queens and Nuclei

Choice Home-Bred and Imported Stock. All Queens reared in full colonies.

Prices for April

One Tested Queen....	$1.85
" Select Tested	2.40
" Breeding Queen..	3.65
" Comb Nucleus(no queen)............	1.50
" ½ Pound Bees....	.75

Safe arrival guaranteed.

For prices on larger quantities and description of each grade of Queens, send for Free Catalog. Send for sample Comb Foundation.

J. L. STRONG,
204 E. Logan St., Clarinda, Iowa.

Please mention Am. Bee Journal when writing.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to to George W. York & Co., 117 N. Jefferson St., Chicago, Ill.

Souvenir Bee Postal Cards

We have 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with stanza of poetry, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for $1.10. Send all orders to the office of the American Bee Journal.

American Bee Journal

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

WANTED—House, some land, 50 or more colonies of bees. W. C. Davenport, 2300 Lunt Ave., Chicago, Ill.

SAMPLE OF HONEY 10 years old, and Best Mailing Case—free. 12A1y
C. W. Dayton, Chatsworth, Cal.

FOR SALE.—Bees, honey, and bee-supplies. We are in the market for beeswax and honey.
5Atf Ogden Bee & Honey Co., Ogden Utah.

FOR SALE—Choice light-amber extracted honey—thick, well ripened, delicious flavor. Price 9 cents per pound in new 60-lb. cans.
1Atf J. P. Moore, Morgan, Ky.

BARRED ROCK—bred to lay, and exhibit. Eggs, $2 per 15; $3 per 30. Satisfaction guaranteed. Louis Van Butsele,
2A2t Rt. 1, Collinsville, Ill.

INDIAN RUNNER Duck Culture Book. Information that beginners are looking for. (Special price, 50 cents.)
George W. York & Co.,
117 N. Jefferson St., Chicago, Ill.

COOK'S BARRED ROCKS—Eggs for hatching. Two grand pens. Write for prices, and list of winnings. Fred M. Cook,
3A2t Box 105, Mechanicsville, Iowa.

FOR SALE—Orange Grove, 300 bearing trees on high pine land near Sanford, Orange Co., Fla. Good condition, near R.R. Sta. Sacrifice price. James Graves, New London, Ct.

PENNA. BEE-KEEPERS—Having bought supply business of Geo. H. Rea, I can furnish complete line of Root's goods. Full car just in. Catalog free. Thos. H. Litz,
Osceola Mills, Pa.

QUEENS—Mott's Strain of Italians and Carniolans. Ten-page list free. Plans of Increase for 15 cts.; also, How to Introduce Queens, 15c; or copy of both for 25 cts.
3A2t E. E. Mott, Glenwood, Mich.

MY SYSTEM—Union bee-hive and Queen. Will increase both your colonies and honey crop, and improve your stock, making bee-keeping a real pleasure. Cash orders $10.00.
3Atf Joe Egner, Box 552, Lavergne, Ill.

QUEENS—Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have, Frank M. Keith,
8Atf 83½ Florence St., Worcester, Mass.

THREE MONTHS' TRIAL for 15 cts. for the bee-journal that "Grandpa" can read. Large type. New cover design. Eight extra pages. The Bee-Keepers' Review, 230 Woodland Ave., Detroit, Mich.

WANTED—All Southern Idaho bee-keepers to know they can get all kinds of Bee-Keepers' Supplies at home. Write for catalog. I have my own factory. C. E. Shriver,
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FOR SALE—California bee-ranch: first-class apiary; concrete buildings in excellent repair; good spring water and healthful climate; a comfortable home near the cleanest town in the United States at moderate price. H. E. Wilder, Riverside, Calif.

WANTED—Apiarist who has had experience, and knows how to rear good queens cheaply; who can do any work with bees alone, yet follow instructions when given. Give reference; state wages wanted first letter. H. C. Ahlers, West Bend, Wis

COMPLETE COMB HONEY OUTFIT for 1000 colonies, consisting of 460 Colonies of Bees in good condition. Hives with worker-combs, supers filled with sections, etc. Correspondence solicited from parties meaning business. Address, Frank Rauchfuss, 1440 Market Street, Denver, Colo. 1A3t

"If goods are wanted quick, send to Pouder."

Bee-Supplies

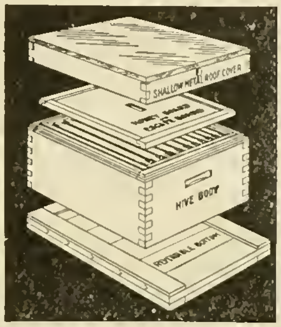
Standard hives with latest improvements, Danzenbaker Hives, Sections, Foundation, Extractors, Smokers; in fact, everything used about the bees. My equipment, my stock of goods, the quality of my goods and my shipping facilities can not be excelled.

PAPER HONEY-JARS

For extracted honey. Made of heavy paper and paraffine coated, with tight seal. Every honey-producer will be interested. A descriptive circular free. Finest white clover honey on hand at all times. I buy beeswax. Catalog of supplies free.

WALTER S. POUDER, Indianapolis, Ind.
859 Massachusetts Avenue.

Protection Hive



The best and lowest-priced double-wall hive on the market. This hive has ⅞-in. material in the outer wall and it is not cheaply made of ⅜ material as are some other hives on the market. Send for CIRCULAR showing 12 large illustrations. It will pay to investigate.

Manufactured only by

Bingham Smokers

Insist on "Old Reliable" BINGHAM SMOKERS, for sale by all dealers in Bee-keepers' supplies. For over 30 years the standard in all countries. The smoker with a valve in the bellows, with direct draft, bent cap, inverted bellows and soot-burning device.

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CLEAN
BEE SMOKER
Pat'd 1878, '82, '92 & 1903

Smoke Engine, 4-inch, each, $1.25; mail, $1.50.
Doctor, 3½-inch, each, 85c; mail, $1.10.
Conqueror, 3-inch, each, 75c; mail, $1.00.
Little Wonder, 2-in., ea., 50c; mail, 65c.
Honey-Knife, 60 cents; mail, 80 cents.

A. G. WOODMAN CO., Grand Rapids, Mich.

WANTED—Choice extracted white and amber honey in barrels or cans. Send sample, and price delivered f. o. b. Preston.
11Atf M. V. Facey, Preston, Minn.

QUIRIN'S famous improved Italian queens, nuclei, colonies, and by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. 3A5t
Quirin-the-Queen-Breeder, Bellevue, Ohio.

GOLDEN and 3-band Italian Queens (strictly free from disease). Tested Queens, $1.00 each; 3 for $2.75; 6 or more, 85 cts. each. Untested, 75c each; 3 Queens $2.00; from 6 to 50, 65 cts. each. Bees by the pound, $1.00. Nuclei, per frame, $1.25. Safe arrival and satisfaction guaranteed. C. B Bankston,
2Atf Buffalo, Leon Co., Texas.

FOR SALE—131 acres of extra-fine farming land in the famous San Saba Valley. All tillable, enclosd with 8 wire fence; good tank of water, 20 acres fenced off; 10 acres in cultivation. Plenty of oak and mesquite timber; good bee-location, and will grow pecans —near largest pecan orchard in Tex. If sold at once, $35 an acre. L. B. Smith, Rescue, Tex.

FOR SALE—An apiary of 240 colonies with all appliances for managing this number of bees in an up-to-date manner for extracted honey. In the far-famed Hudson River Valley, on a location which has not failed in 32 years to give a paying crop of honey. The encroachment of the city, which necessitates the removal of the bees, the cause of selling. Correspondence solicited from those only who mean business.
James McNeill, Hudson, N. Y.

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 2148 Sunnyside Ave., Chicago, Ill.

Famous Queens!

From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $1.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens—1-frame, $2.50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; six 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drones as well as the Queens.

We guarantee safe arrival and satisfaction.

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2A9t **Jacksonville, Ark.**

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American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address all orders to, Geo. W. York & Co., 117 N. Jefferson St. Chicago, Ill.

The Orange: Its Cultivation and Commercial Value

The Washington Navel is easily a peerless prince among fruits. To plant and care for it is "a gentleman's job," and when in the hand of a skillful orchardist, and planted "in the right place," possible cash returns are incredible.

The following item that has been going the rounds of the press in this State has elicited many comments:

> "C. B. Pulver, of Santa Ana, reports cash returns of $1800 an acre for two acres of oranges just marketed; that is, $3600 for the two acres. He states that he made no exceptional effort, and gave the trees only the usual allowance of enrichment."

This was published in the The Pacific Rural Press of Jan. 6, 1912. E. J. Wickson, Dean of the State University at Berkeley, is editor. He is well known as an eminent authority on citrus fruit, and a most conservative and scrupulously careful man. No such item could reach his columns unless he were entirely satisfied as to its truthfulness.

Shall we brand this statement as "incredible," or shall we accept it as probably true?

Similar items have appeared in print frequently in the past 8 or 10 years, the returns given ranging from $500 to $1200 an acre. Many of these have been so carefully corroborated as to leave no tenable doubt of their truthfulness. Occasionally it was 20 to 50 acres instead of only two, giving the large returns.

But the important point is not the credibility of a few isolated freaks, but rather what may we state as a reasonable average for all the ground planted. One thing is certain, somebody is making a whole lot of money in California off of fruit in general, and oranges in particular.

Official statistics show our people have the largest percapita wealth of any State in the Union, being $2235 for every man, woman and child in the State. New York comes next with a percapita wealth of $1868. But New York has a percapita State debt of $57.64, while California's State debt is $9.71, giving us the largest percapita wealth, and at the same time the smallest percapita debt. Surely, our people are not making a financial failure in "the fruit-business."

Accepted statistics show we have 10,000 orange-growers, with 70,000 acres in "bearing orchards," and that our people received approximately $34,000,000 cash returns from oranges last year. Dividing the returns by the 70,000 acres in bearing, gives a cash return of $485 for every acre reported by our assessors. Again dividing the 70,000 acres among the 10,000 growers, we have but 7 acres for each of them, with an average income of $3400.

Haven't we here reasonable justification for encouragement given to the man who modestly ventures with "just a small orchard" of only 7 acres, expecting to support a family?

But if such returns are actually received, then what kind of prices are being paid for orchards in full bearing?

In nearly all cases we find bearing orchards are bought by investors and for an income. The most nervously careful man you find using money is "the investor." He not only counts the present returns, but he also carefully calculates the future. When he buys bonds, he must be content with about 5 percent; but the statistics quoted show the gross returns from oranges gives an income of over 17 percent on the accepted statement of $200,000,000 invested in the orange industry.

Groves began changing hands but a few years since, at about $500 an acre. The increase has been steady and strong, and what was once sold for $500 is now held at $1500, and "the rare cases" reach $3000 to $4000 an acre. The accepted average yield of $485 is 20 percent on a valuation of $2425 an acre. This, then, would be the market valuation of the whole 70,000 acres. But such a valuation would give us but $169,750,000, while assessors' returns give us $200,000,000 as invested in this industry—this is $30,250,000 short in amount, and means the actual value of a bearing orchard as $2425 is entirely too small, or less than the appraised value.

Orange-Trees of the Sacramento Valley, Butte Co., California.

Have we not here ample corroboration of the probability of occasional returns up to $1800 an acre for a single harvest? $1800 an acre is 20 percent on a valuation of $9000 an acre.

But 15 percent is regarded as "a very fair income" on cost of real estate. On such a basis an acre of ground that produces $1800 is worth $12,000. Remembering that thus far our oldest orange-groves are still increasing in productiveness with age, what shall we say should be accepted as "a reasonable price" for orange-groves when in full bearing?

Oh, but you say such prices for orchards are absurd, because there is such an enormous amount of unused land where oranges can be grown, and they are now produced in 7 of our States. I answer that Washington Navel oranges can be grown in only one State—there is no other that is "just as good." Furthermore, we are considering "the best quality of the Navels." Such fruit can not be grown "all over California," as we so often hear flippantly stated.

The orange is exceptionally arbitrary as to its location—and that is the kind we are talking about.

To secure this you must plant where there is an abundance of water at small cost; where the climate will insure a perfectly ripe and exquisitely colored orange as early as the middle of November. It prefers "red foot-hill soil" that is deep and rich, underlaid with gravel to insure perfect drainage; where it has "a summer of at least 90 days, over which the temperature never falls below 90 degrees; where there is no ocean breeze or fog. Not a drop of rain or dew, nor a bit of humidity or scarcely a cloud to obstruct the continuous flow of pure, unadulterated California sunshine." If any of these are wanting, the sun will be in some measure robbed of its chemical powers to the detriment of its quality and loss to the fruit.

There must be "no black scale," no smut from scale or from fire-pots used in a desperate battle to "heat all outdoors" and prevent loss from frost.

Besides, "for the best results," you require a convenient transportation to save time and cost as well as damage to the fruit from hauling it long distances over rough roads. Only "the perfect fruit" can win the prize.

The cheapest fruit in the market is "a defective orange"—it won't pay freight. It is a mistake to plant any fruit where it will not be *at its best*, and this especially applies to the orange.

I repeat, the land is "strictly limited" where the largest number of oranges per acre of the finest quality, ripe promptly "at the best time," can be grown, and in consequence such ground has a real value away beyond that yet ascertained or considered.

I do not say the time is near when all groves will give a return of $1800 an acre, or $800 an acre, or even far less. I freely grant it is possible even under the most favorable condition to so treat a grove of oranges so that you won't get over $100 an acre, and, in fact, so you ought not to get anything; but all such possibilities prove nothing so long as it remains a fact that one might secure a return of $1800 or $800, or even $400 an acre. Conceding all this, and it still remains true that an acre of ground on which can be grown the finest quality of the Early Washington Navel orange in perfection, is cheap property (if it has convenient market and plenty of water at small cost) at even $1000 an acre for "bare ground," and there is plenty of money in doing so, if you sell the bearing orchard for $1500.

Whether land is cheap or not depends upon what revenue it may be compelled to yield—*not first cost.*

Glad to have you, *reader*, write me for such further information as you may desire, always mentioning having seen this in the American Bee Journal.

E. S. Weeden,
Pres. Calif. Land & Development Co.
Oroville, Butte Co., Calif.

◆

"The Great Destroyer" is the subject of a great speech by the Hon. Richmond P. Hobson, Congressman from Alabama, on the livest topic of the day—the temperance question. We wish that every reader of the American Bee Journal would send for a free copy. It contains the most and best ammunition on the subject we have ever seen in print. While we do not fully agree with Mr. Hobson's final *method* of destroying the Great Destroyer, we do agree with his attitude toward it, and are satisfied he is right in his comprehensive investigations of the subject. Ask for a copy of it. Address, Hon. Richmond P. Hobson, care House of Representatives, Washington, D. C.

◆

"A Year's Work in an Out-Apiary" is the name of a booklet by G. M. Doolittle, the well-known honey-producer of New York State. He tells how he secured an average of 114½ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey-producer. The price of the booklet is 50 cents, postpaid, but we club it with the American Bee Journal for a year—both for $1.30. Every bee-keeper should have a copy of this booklet, and study it thoroughly. Address all orders to the American Bee Journal, 117 North Jefferson St., Chicago, Ill.

◆

"Bee-Keepers' Guide"

This book on bees is also known as the "Manual of the Apiary." It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American bee-book. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library. It has 544 pages, and 295 illustrations. Bound in cloth. Price, postpaid, $1.20; or with a year's subscription to the American Bee Journal—both for $1.90. Send all orders to the office of the American Bee Journal.

BARNES' Foot-Power Machinery

Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, **W. F. & JOHN BARNES,**
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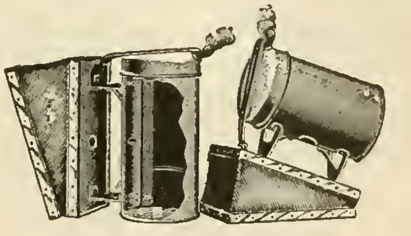
Danzenbaker Victor Bee-Smoker



3½x6 INCHES.

Shown above in a standing and reclining position. In the latter the grate is under, that it may have a full head of smoke ready on the job at a touch of bellows.

The perpendicular **Fire-Draft Grate,** forcing air **both ways,** makes and **cools** the smoke, forming a **Double Fire-Wall** for **securely** riveting the **double-braced** brackets to the cup, that is **firmly bolted** to the valveless bellows by **Locked Nuts.**

The **One-Piece** cap **can not clog.** It is the **coolest, cleanest, strongest, best,** and **largest net capacity** of all smokers, selling at one dollar ($1.00). We **guarantee satisfaction.**

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Both COMB and EXTRACTED

Write us before disposing of your Honey Crop.

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—WANTED—

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Beeswax Wanted.—We are paying 28 cents, cash, per pound for good, pure yellow beeswax delivered at our office. If you want the money promptly for your beeswax, ship it to us, either by express or freight. A strong bag is the best in which to ship beeswax. Quantity and distance from Chicago should decide as to freight or express. Perhaps under 25 pounds would better be sent by express, if distance is not too great. Address, George W. York & Co.,
117 N. Jefferson St., Chicago, Ill.

SUPERIOR CARNIOLAN QUEENS

Write for our paper, "Superiority of Carniolan Bees," giving our ten years' experience with this race, general description, points of superiority, best system of management of these Bees, prices of our Queens, etc. It's Free.

ALBERT G. HANN,
Scientific Queen-Breeder, **Pittstown, N. J.**

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White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil are not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed can be sown any time. From 18 to 20 pounds per acre of the unhulled seed is about the right quantity to sow.

We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents. By express f. o. b. Chicago—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.50; 50 pounds for $6.50; or 100 pounds for $12.00.

If wanted by freight, it will be necessary to add 25 cents more for cartage to the above prices on each order.

George W. York & Co., 117 N. Jeff. st., Chicago, Ill.

LEWIS BEEWARE—Shipped Promptly

ARND HONEY & BEE-SUPPLY CO. NOT INC.

Successors to the York Honey & Bee-Supply Co.) **Send for Catalog.**

148 West Superior St., CHICAGO, ILL. **Enough said!**

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Is to Keep Your Colonies Strong; to do This You Must Have

GOOD LAYING QUEENS

Which We Guarantee at the Following Prices:

Golden 3-Band Italian Carniolan

Untested—1 for $1.00; 6 for $5.40; 12 for $9 60; 25 for $17.50
Tested—1 for $1.50; 6 for $8.40; 12 for $15.60; 25 for $30.00
Nuclei with Untested Queen—1-frame, $2.50; six 1-frame, $15.00
" " " " —2 frame, $3.50; six 2-frame, $20.40
" " **Tested** " —1 frame, $3.00; six 1-frame, $17.40
" " " " —2-frame, $4.00; six 2-frame, $23.40

The Drones used in our Apiary for Mating purpose are reared from the very best selected Queens, which is as necessary as the selecting of a good Queen for Queen-Rearing.

For good Queens and quick service you can not do better than place your order with us. We guarantee safe arrival and satisfaction. Directions for building up weak Colonies will be mailed to you for 10 cents.

The above Queens are all reared in Separate Yards. 2 Atf

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I bring only 15¢ per lb.

Capon 8 lbs.

ROOSTER 4½ LBS.

CAPONS bring the largest profits — 100% more than other poultry. Caponizing is easy and soon learned. Capons sell for 30c. a pound, while ordinary poultry brings only 15c. a pound. Progressive poultrymen know these things and use

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Write for Fall Discounts—we can save you money.

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FIGURE THIS OUT FOR YOURSELF

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THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months—¼ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

ANOTHER reason is that we can serve you better now than three months hence. In a few weeks we will be putting up carload shipments for our dealers and distributing centers, and every effort in our big plant—the largest establishment in the world devoted to the manufacture of bee-supplies—will be directed to filling rush orders. You will be just as anxious for your goods as our other patrons, and will deserve and receive the same attention—no matter what the amount of your order may be, but

We can Serve you Better Now

and we want to make it worth your while to place an early order. Try this on a part of your list anyway. Saving at the rate of 12 percent per year ought to interest everybody.

We Manufacture Everything in Bee-Supplies

Get our 1912 catalog which gives descriptions, illustrations and prices on everything from bee-hives to bee-books, from frames to comb foundation. **Get this Catalog NOW.**

THE A. I. ROOT COMPANY,
213 Institute Place, **Chicago, Illinois**
R. W. BOYDEN, Mgr. (Jeffrey Building) Tel. 1484 North.

You will be a busy bee if you locate in the Fertile Northwest

Bee-Culture in the Northwest should prove surprisingly attractive to the workers with Bees in other parts of the country.

Climate —The great diversity of climate due to the varied altitudes and topographic features, affords a wide range of selection in locations, in this dry, mild, and equable region.

Bee-Food —The wonderfully fertile soil produces the finest of clovers, alfalfa, peas, etc., so important in the production of a good and pure article of honey. Even the common sage-brush is noted for its value in honey-production.

Orchards —The vast acreage in orchards in the Northwest should prove a strong argument to an experienced bee-worker to move to this very fertile country. Orchards and hives have been most profitably combined already, in many instances. The superiority of Northwestern fruit-blooms aids to produce a superior quality of honey, and the bees perform a reciprocal service in fruit-pollenization.

Markets —Nowhere are there more stable and remunerative markets for good honey. The many large cities, the rich mining camps, and Alaska, provide the best of markets right at home, at top prices.

Literature —For free literature relating to the Northwest, and particulars of Low Colonist, Homeseeker, and Summer Excursion Fares, write to

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Italians
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The best to be found of each. Will be ready as soon as you can use them. Let me book your orders now.

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PRICES:

Untested, each, 75 cents; per dozen, $8.00.
Tested, each, $1.25; per dozen, $12.00.

Circular Free.

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Italians AND Carniolans

The Keith System of Breeding insures the best Queens that can be produced. My Strain is the result of 20 years of careful breeding and selection. I feel confident that few, if any, can surpass them.

Color has not been my special object; but to produce bees that will bring in honey, and store it in supers where it is wanted. I am also paying a great deal of attention to Gentleness among my bees, so that almost any one can handle them.

Annual importations of Queens has kept my stock absolutely pure.

Prices as follows;

	1	6	12
Virgins	$ .65	$3.50	$ 6.00
Untested	1.00	4.00	7.00
Warranted	1.25	5.50	11.00
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Select Tested, $2.00 each.
Breeder, $3.00 and up.

Nuclei and Full Colonies.

Bees dy the Pound. Write for Circular. Apiaries inspected for brood-diseases.

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For 60 Days. Dovetailed Hives

1½-story, $1.35 each. Hoffman Frames, $2.25 per 100. Just make us a Bill of the Goods you might need for 1912, and we will quote Lowest Prices. We make all kinds of Bee Goods. **FINE QUEENS** at all times to be had. Untested, 75 cts.; Tested, $1.00.

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1Atf **Biglerville, Pa.**

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Results Count

When you buy **Comb Foundation** you look for **RESULTS.**

The Dittmer Process Comb Foundation is the right **SMELL,** the right **TASTE,** and the right **FIRMNESS** to give **Best Results.**

The Dittmer Process Comb Foundation is so like **Beeswax** the Honey-Bees would **SHAPE** and **MOULD** for themselves, it makes it very acceptable to them. This assures a **Full Capacity Honey Crop,** and remember, to you, Mr. Bee-Keeper, **Honey is Money.**

A **Liberal Discount** Offered on all **Supplies.** Write for Prices.

Gus Dittmer Company, - Augusta, Wisconsin.

50,000 Copies "Honey as a Health-Food" To Help Increase the Demand for Honey

We have had printed an edition of over 50,000 copies of the 16-page pamphlet on Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp: 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed **free** at the bottom of front page on all orders for 100 or more copies.

Address all orders to

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Is the only city located on both Water and Rail. Shipping can be done to all North Shores by either, but all those on boat lines can save freight by boat, especially those in North Michigan.

Send us list of Goods needed, and let us quote you our Special Prices on quantity orders.

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On Bee, Fruit, Poultry, and Farm Papers. Ask for it.

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is the most Complete of any.

SPECIAL PRICES on Poultry, Feeds, Shells, Grit, Charcoal, etc.

Beeswax Wanted. **Send for Our 1912 Catalog.**

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INSURES your crop against **DROUTH**
Our experience in 1910 and 1911 has proved that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 had a crop in 1911.

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When you write ask about the **Campbell Correspondence School.** 8Atf

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Makers of Weed New Process Comb Foundation.

Buy Honey and Beeswax.

Catalogs Free.

Toepperwein & Mayfield Co.
Cor. Nolan & Cherry Sts.,
4Atf **San Antonio, Texas.**

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Mexico as a Bee-Country

B. A. Hadsell, one of the most experienced and largest bee-keepers in the world—has made six trips to Mexico, investigating that place as a bee-country, and is so infatuated with it that he is closing out his bees in Arizona. He has been to great expense in getting up a finely illustrated 32-page booklet, describing the tropics of Mexico as a Bee-Man's Paradise, which is also superior as a farming, stock-raising and fruit country. Where mercury ranges between 55 and 98. Frost and sun-stroke is unknown. Also a great health resort. He will mail this book FREE by addressing, 7A12t

B. A. Hadsell, Lititz, Pa.

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Early (FROFALCON) Queens "ITALIANS"

February and March deliveries—for Untested, $1.50 each; April, $1.25. Tested Queens, 50 cts. additional; Select Tested, $1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,
257-9 Market St., **San Francisco, Cal.**
Or Berkeley, Cal.

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COST SALE

Of **BEE-KEEPERS' SUPPLIES** for the **next 4 months.** Too big Stock to carry over. Write your wants; I will make price to suit. Sept. 26, 1911.

W. D. Soper, 323 and 325 Park Ave. **Jackson, Mich.**

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SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by

Colorado Honey-Producers' Association,
Denver, Colo.

Please mention Am. Bee Journal when writing.

For Sale—15 Eggs $1.00

Indian Runner Ducks—White and Fawn.
2-3 **J. F. Michael, Rt. 1, Winchester, Ind.**

Please mention Am. Bee Journal when writing.

HONEY AND BEESWAX

CHICAGO, Feb 27.—The demand for honey during the month of February hardly met expectations, yet fancy comb honey was scarce and sells at 17@18c per lb., with the off grades at from 1@5c per lb. less. Extracted is steady, but not moving in quantities. White brings 8@9c per lb.; amber, 7@8c per lb. Beeswax is steady and sells at from 30@32c. R. A. BURNETT & CO.

INDIANAPOLIS, Feb. 26.—White comb honey sells at 18c per pound in 10-case lots. Amber grades in slow demand and at lower figures. Best extracted sells at 11@12c per pound in 5-gallon cans. Jobbing houses are well supplied, but producers are not now offering any honey. Beeswax is in good demand, and produces are being paid 31c per pound.
WALTER S. POUDER.

CINCINNATI, Feb. 10.—The market on comb honey has fallen off somewhat, only demand for fancy white selling in retail way at $4 00 per case; and jobbers at $3 60@$3.75, according to quality. Extra white extracted in 60-lb. cans at 10c; light amber in 60-lb. cans at 8½c; amber in barrels, 7@7½c. Beeswax in fair demand at $33 per 100 lbs.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

KANSAS CITY, MO., Feb. 20.—We are having a better demand for comb honey, but no change in prices. Receips light. We quote: No. 1 white comb, 24-section cases, $3 25; No. 2, $3.00; No. 1 amber, $3 00; No. 2, $2 75. Extracted, white, per pound, 8½@9c; amber, 8@8½c; dark, 5½c. Beeswax, per lb., 25@28c.
C. C. CLEMONS PRODUCE CO.

SAN FRANCISCO, Feb. 28.—The demand for honey the past month has been more marked, and there is still a lot unsold. Comb honey, 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6½c. Beeswax, 27½@30c per pound for light in color, and 23@26c for dark. J. C. FROHLIGER.

DENVER, Feb. 20.—Supply of strictly white comb honey is about exhausted, and prices as a consequence are higher than they otherwise would be, as the demand is light. We quote No. 1 white comb honey, per case of 24 sections, $3.60; No. 1 light amber, $3.35; No. 2, $3 15. White extracted, per pound, 9c; light amber, 8c; strained, 6¾@7½c. For clean yellow beeswax we pay 26c cash, or 28c in trade, delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

BOSTON, Feb. 28.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. BLAKE,-LEE CO.

NEW YORK, Feb. 28.—We have practically nothing new to report as to the condition of the market. Very little comb honey is arriving, and what little lots do come in find ready sale at prices ranging all the way from 14@17c for the white, and from 11@13c for dark and amber, according to quality and style of package. As to extracted honey, the market is decidedly quiet. Ever since the first of December the demand has been gradually decreasing, and with large stocks on hand prices have shown a downward tendency, and are likely to decline still further. We quote nominally: California white sage at 9c; Western white alfalfa at 8c; Western light amber alfalfa at from 7@7½c; in quantity lots even these prices would have to be shaded in order to effect sale. Beeswax steady at from 30@31c per lb.
HILDRETH & SEGELKEN.

CINCINNATI, Feb. 27.—We see nothing exciting in the demand for honey; there seems to be plenty of honey of all kinds. We are selling fancy comb honey in 24 sections, glass front cases, at $3.75 to $4.00 a case. It is an imposition on the consumer to sell lower grades, and hereafter we shall absolutely refuse to buy it, for on each transaction we not only lose money, but spoil the trade for good honey. For strictly fancy water-white extracted table honey we are getting from 9@10c a pound, in crates or boxes of two 60 pound cans each; for amber honey in barrels from 7@8c. For strictly choice, bright yellow beeswax we are paying from 30@31c a pound delivered here, and for lower grades from 1@2c a pound less.
THE FRED W. MUTH CO.

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

GEORGE W. YORK & CO.
CHICAGO, ILL.

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Some things in addition to service, prompt and satisfactory shipments, and a real desire to please you, that come from the central point of distribution.

Root's Supplies—new and clean, and of the finest quality. New hives, new foundation, new sections—everything fresh from the factory in carload shipments.

Early-Order Discounts for Cash:—Three percent for January: two percent for February—a worth-while saving to which you are entitled. Don't fail to get in your order at once.

Saving on Freight or Express—By buying here, part of the cost of shipment is borne by us. You pay only from Cincinnati. This is quite an item on large orders, and our patrons are coming to appreciate it more and more.

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PROCESS OF MANUFACTURE.—The very best grades of beeswax, clarified without that acid taste or odor which is so obectionable in some makes, sheeted by our heavy pressure process, reduced and polished by smoothrolls, allowed ample time to cure, is finally passed through embossed power mills, resulting in that cear, absolutely pure product, **FAMOUS THE WORLD OVER, “FALCON” FOUNDATION.** No detail, from the buying of the beeswax to the packing of the product, is slighted. The care and skill in cleansing, the absolute purity from all foreign matter, the enormous pressure in sheeting into continuous belt-like sheets, the transparency and perfectness of the finished product, with the appearance and smell of the hive itself (for it is indeed the product of the bees, purified, embossed and returned for their use), has made a product, **“FALCON” FOUNDATION,** which has been chosen by the bees themselves as the acme of foundations. The **“FALCON” WAY** is **OUR WAY** developed in thirty years of foundation manufacture.

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“FALCON” FOUNDATION made by our sepecial methods has won a reputation on account of its perfect cell formation, non-stretching qualities, and the readiness with which bees begin work upon it. Our section foundation is perfectly clear, and with it is produced those pearly white sections of honey so much admired. Our brood foundation is particularly adapted for full sheets in brood or extracting frames Its strength eliminates all stretched cells in which drone-brood is reared or elongated cells in which no eggs at all are laid. Use **“FALCON” FOUNDATION** and satisfy your bees.

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WE GUARANTEE every sheet equal to samples in every particular. Drop us a card for samples and they will be sent postpaid.

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W. T. Falconer Mfg. Company

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

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WHERE pure water is plentiful, comes when you wish, and stays when you will;

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WHERE crops never fail from drouth, and the unhoused harvest is never damaged by storms;

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WHERE you can raise two crops of some things (on the same ground the same season), and continuous crops of other things, giving you “a money harvest” to sell every week in the year;

WHERE “sunny days” cover two-thirds the time, and yet sunstroke or “death or damage from heat” are unknown;

WHERE bees banquet in fields of never-fading flowers, securing rich stores of honey—which they do not consume “in wintry hours;”

WHERE you can grow practically all the nuts and fruits of commerce to perfection and in enormous quantities. Remember that Apricots, Almonds, Raisins, Figs. Olives and **Washington Navel Oranges** can not be grown in commercial quantities anywhere in the United States outside of California. Hence, a good price is assured, and over-production impossible.

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WHERE you can (with the help of your boys) take the best care of it—thus forever ending the torturing ghost of “hired help;”

WHERE “your boys” will get rich on berry-patches, and “the women-folks” with poultry—as a by-product;

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You want to know all about this wonderful land. You can secure full and accurate information by writing to

Col. E. S. WEEDEN, OROVILLE, CALIF.

Stating you saw this advertisement in the American Bee Journal. Reference—Editor American Bee Journal.

April, 1912

Volume LII. No. 4

AMERICAN BEE JOURNAL

The Oldest Bee-Paper in America

Mass Agl College apr17
Library Amherst, Mass

The Ivy Bee-Ranch, located near Phoenix, Ariz.—Salt River Project.—(See page 103.)

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
117 N. Jefferson Street, Chicago, Ill.

IMPORTANT NOTICE

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THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec11" on your label shows that it is paid to the end of December, 1911.

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Goes to press the 6th of each month.

(Organized 1870.)

National Bee - Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

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Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.

Send Dues to the Secretary, E. B. Tyrrell.

Can't Do Without the Bee Journal.

MESSRS. GEORGE W. YORK & Co.

Gentlemen:—Enclosed you will find my renewal for another year to the "Old Reliable." I simply cannot do without your paper, and I believe if I could not get it I would certainly have to give up keeping bees, so closely is it linked with my bee-keeping life. You can certainly count on me for life, as I get more pleasure and profit out of a single number of your paper than a whole year costs.

WALTER E. ATKINSON.
Baltimore Co., Md., Sept. 14, 1910.

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Untested Queens, 75c each; $8.00 per doz.; two or more doz. in one order, $7.50 per doz.
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5c each extra.

1/8-lb. Packages of Bees after May 1st, $2.00. Select queen wanted and add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-Frame Nuclei, with Untested Queen, $2.00 each; 2-fr., $3.00; 3-fr., $4.00. Full Colony of Bees in 10-fr. hive, $7.00, Add 50c if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For 10 or more Colonies or Nuclei, deduct 25c each.

I have successfully shipped Bees and Queens from this place every month of the year. I started two colonies Jan. 25th on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at The Cotton Palace, in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are Cash with order. I refer you to Sabinal National Bank or any businee firm in Sabinal.

I have seven yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

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Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.**, and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG
Will tell you all about our
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Sold at lowest living prices. We handle the Best Sections in the World—the August Lotz Sections at Lotz prices. **Three Carloads** of Goods on hand with 2 more coming.

Drop us a card and we can please you.

Catalog Free. **H. S. Duby, St. Anne, Ill.**

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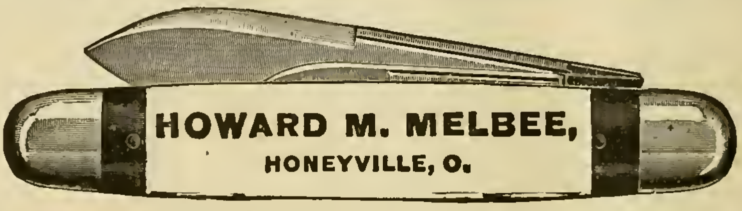
The Bee-Keeper's Novelty Pocket-Knife



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

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George W. York & Co., 117 N. Jefferson St., Chicago, Ill.

Mr. New Beeman: "Well, well, nailing up your bee-hives already? Aren't you rather early?"

Mr. Successful Beeman: "Now, then, that is where so many make their mistake—they wait until the last moment and then rush and buy anything they can get. You have often asked me the secret of my successful bee-keeping. Well, listen! I order **early,** buy the **best bee hives and supplies** on the market, nail them up, and then I am ready for the bees. All my Supplies come from

THE FRED W. MUTH CO.
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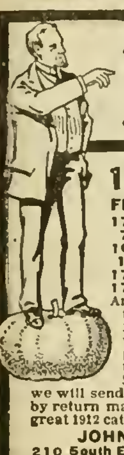

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10,000 KERNELS OF Selected FERTILE SEEDS for 16c

1750 Lettuce
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Any one of these packages is worth the price we ask for the whole 10,000 kernels. It is merely our way of letting you test our seed—proving to you how mighty good they are.

Send 16 cents in stamps to-day and we will send you this great collection of seeds by return mail. We'll also mail you free our great 1912 catalog—if you ask for it—all postpaid.

JOHN A. SALZER SEED CO.
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Please mention Am. Bee Journal when writing.

FOR SALE

Golden Untested Queens at 75 cents each; or $8.00 per doz. Tested Queens, $1.25 each. or six for $6.00. Select Tested, $2.00 each, or six for $10.00.

Safe arrival and perfect satisfaction guaranteed. 4Atf

R. O. Cox, Box 8, Garland, Ala.

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New Goods. Factory Prices.
Save Freight & Express Charges

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Alsike Clover Seed, Small Red, Mammoth, Alfalfa, Blue Grass, Sweet Clover, Red Top, Rape, Timothy, Millet, etc. Also, high-bred Seed Corn. 2A3t

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Etc.

Which are you interested in? Send your name for our 1912 Catalog.

M. H. HUNT & SON,
Lansing, Mich.

Please mention Am. Bee Journal when writing.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50 ; 3 for $2.50 ; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them :

George W. York & Co.:—The two queens received of you some time ago are fine They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co , Kan , July 15. A. W. Swan.

George W. York & Co :—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22 Chas. Mitchell

George W. York & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. Oglesby.

George W York & Co.:—The queen I received of you a few days ago came through O. K . and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. McColm.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

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BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.** Our Catalog is free for the asking.

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When You Buy Lewis Beeware

You Get

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine bright basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched over by experts. The Lewis head mechanic has 35 years of bee-supply experience; the superintendent of bee-hive department 29 years; the superintendent of sections 28 years. These and many other skilled men have a hand in all the Lewis goods you buy.

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G. B. LEWIS CO., MANUFACTURERS OF BEEWARE **WATERTOWN, WIS.**

If BEES could TALK

THEY WOULD SAY:

"GIVE US
DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

AMERICAN
BEE JOURNAL
L. L. LANGSTROTH
CHAS. DADANT

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by George W. York & Company, 117 North Jefferson Street,

GEORGE W. YORK, Editor.
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., APRIL, 1912

Vol. LII---No. 4

EDITORIAL COMMENTS

Size of Hives and Frames

In an article in the Canadian Bee Journal, Samuel Simmins, a prominent bee-keeper of England, begins by asking, "What is wrong with American and Canadian bee-keeping?" He laments a falling off in the yield per colony (which falling off does not seem to have been prominently mentioned in this country), and attributes it to the small size of the frames and hives in use. He has little respect for such "diminutive hives" as the 8 or 10 frame Langstroth, and advocates a hive containing 11 or 12 frames measuring 16 by 10 inches.

"The trouble first to be considered," he says, "is that the Langstroth frame is too small; certainly it is too shallow." In a subsequent number of the same Journal, J. E. Hand says:

> "The dimensions of the Langstroth frame are 9⅛x17⅝, and it contains 157.70 square inches of surface; while the Simmins frame is 16x10 inches, and contains 160 square inches of surface, making a difference of 2.30 square inches in favor of the Simmins frame Now, I am not a little surprised that Mr. Simmins should think even for a moment that a mere matter of 2.30 inches per frame can make all the difference between success and failure in honey-production."

If Mr. Hand will pardon the suggestion to revise his figures, he will find that instead of 157.70, the Langstroth frame contains exactly 160 53-64 square inches, while the Simmins frame contains 160 inches. So if the Langstroth frame is too small, the Simmins frame is still smaller!

There is still left, however, the fact that the Simmins frame is deeper than the Langstroth by ⅞ of an inch. Can that make such a great difference? Even if the difference be not great, it is just so much in favor of better wintering. But Mr. Simmins says the Langstroth frame is too small *for the honey season* in any locality. There can be no denying that the nearer the spherical form a hive allows the bees to cluster the better it suits them, and even ⅞ of an inch difference in the depth of a hive may make quite a difference in allowing the bees to assume that form. But will this hold good *in the honey season?* Whether Mr. Simmins may have fallen into that error or not, it is an error only too common to speak as if the brood-chamber alone were to be considered as the domain of the bees during the honey season.

Suppose one hive has frames 6 inches deep with brood to the top-bars, and over this a story with frames 4 inches filled with honey. Suppose another hive has frames 10 inches deep, the lower 6 inches filled with brood and the upper 4 inches filled with honey. So far as the bees are concerned, what is the great difference? In each there is the same depth of brood and the same depth of honey. What great difference does it make to the bees whether that 4 inches of honey above them is in the same frame or in a separate frame? So whatever may be the case in winter, in the honey season, with supers piled on the brood-chamber, the bees have just as much chance to form a sphere with the Langstroth frame as with one ⅞ of an inch deeper.

Bees Resistant to Foul Brood

The man who browses among other bee-papers to find something in them to dish up for the readers of the Canadian Bee Journal—making an excellent job of said browsing—quotes from the American Bee Journal a passage ending with these words: "Italians resist disease not because they are yellow, but because they are vigorous." He then makes this comment:

> "It would be well for the bee-keeping fraternity if this were true. But is it? Most probably not. Immunity is said to be acquired only after a long and severe process of elimination of the strains that are least able to withstand the attacks of noxious microbes. We know that the people of Asia have developed an ability to resist disease to an astounding degree. A recent article in a scientific contemporary tells us that the Chinese can use contaminated water from canals without incurring dysentery, that very little typhoid is found amongst them, and that small-pox is a mild disease, to be likened to the mumps. And so on. For the conditions in China are such that individuals susceptible to these evils inevitably succumb, and as the result of a terrible selective process a specialized type of vitality, distinct from mere physical strength is evolved. It needs no explanation to show that such a characteristic is peculiar to races rather than individuals, and we should not be surprised if adequate and carefully conducted experiment should prove that the same should likewise be true in the case of the bee."

These words are well worth considering. It may as well be conceded that immunity to any given disease is something separate and apart from vigor. A man who has been vaccinated is immune to small-pox no matter how much of a weakling he may be, while a man of giant strength succumbs to it because not vaccinated. And so it may be that a particular race of bees, or a particular strain of bees, may be immune to a given disease, while a stronger race or strain may yield to it.

It may as well be confessed that this sort of immunity was not in mind when the article was written which our cotemporary discusses. The thought, rather, was that one set of bees would actively clean out the dead brood, while another would allow it to remain. At any rate, it is a fact that a strong colony with a mild attack of European foul brood will often clean up the disease entirely, while a weak colony in the same condition will grow worse and worse. So it is hard to believe that the strength of the colony is not an important factor in the premises; and it may not be far out of the way to believe that the vigor of the individual members of the colony is of still more importance than the mere strength of numbers.

Possibly this is hardly the view that should have been taken, instead of the view of immunity our cotemporary has in mind. An excuse, if an excuse is needed, lies in the fact that those who urge that Italians are better than other bees for those who want to be rid of foul brood not uncommonly use the expression, "Italians are better at cleaning up the disease."

Others, however, and our cotemporary among the number, may say, "We are not considering which bees will do the best at cleaning up the disease, we are considering which are least likely to *catch* it." And the right to that view must be cheerfully admitted. The question then comes, "Are Italians more nearly immune to European foul brood than others?" As a subsidiary question, it may be asked whether Italians have had a better chance than blacks to become immune. In other words, have Italians been longer afflicted with the disease than blacks, and so had a longer time in which to become immune? Certainly, American foul brood is no novelty to either Italians or blacks. Possibly our cotemporary can enlighten us as to European in this regard.

A more important question, perhaps, relates to actual experience. Americans and Australians in general say that Italians are the bees for those who fear foul brood. In Europe it stands the other way, especially in Switzerland. Is one wrong and the other right, or is there a difference between Swiss blacks and American blacks? Frankly, there is a fair chance for difference of opinion, and more light is really needed on the question. An open mind will be found in this locality.

As to the practical part, however, there need be little difference of opinion. If any one happens to have a strain of hybrids or blacks that are above the average, that does not alter the fact that the general experience in this country is that Italians are more vigorous than blacks or hybrids, and so in 99 cases out of a hundred it is good advice to urge the introduction of pure Italians.

Divisible Brood-Chamber Hives

Samuel Simmins, one of the British authorities, laments the decadence of bee-keeping in this country, and lays it chiefly to the fact that we use a frame so shallow as the Langstroth. Louis H. Scholl thinks great gain is to be made by giving up the Langstroth for a shallower frame. The one tells us to make our frames ⅞ of an inch deeper; the other tells us to make them 3¾ inches shallower. What is the beginner to think?

It does one good to see a man thoroughly filled with enthusiasm when he thinks he has gotten hold of a good thing. And Mr. Scholl's enthusiasm about divisible brood-chamber hives is something worthy of admiration. Reminds one of old times when the Heddon hive with its divisible brood-chamber was to make an utter revolution in bee-keeping. Certainly there seems little room to doubt that Mr. Scholl has had better success with shallow frames than with deeper ones. Still, there is some room to raise the question whether Mr. Scholl may not have been to some extent unfortunate in his use of the deeper frames, and is more successful with shallow frames, not because they are inherently better, but because he has thrown his whole energy into using them. Is it entirely fair to compare the inexperienced young Scholl with the Scholl of mature years and brilliant energy?

On page 47 Mr. Scholl gives some of the advantages of the divisible brood-chamber with its shallow frames, but does not this zeal in their behalf sometimes lead him too far—even to claiming advantages for the divisible brood-chamber with shallow frames that belong equally to hives with Langstroth frames? "One of the main advantages is the interchangeableness of the various shallow stories, or the frames from one part of the hive to another." But why does not this advantage apply equally to deeper frames and hives? He replies that "this is impracticable in this day and time of shallow supers, for not only comb honey but extracted honey as well." If that argument is to have weight, it is equivalent to saying: "Nowadays every one uses shallow supers for surplus, so there can be no exchanging between the two departments of brood and surplus." For if any one uses the same frames in his supers that he does in his brood-chamber, he surely has the advantage of exchanging, no matter whether the frames be deep or shallow. As a matter of fact, however many may use shallow supers with deeper hive-bodies, there are still thousands who use Langstroth brood-frames in the brood-chamber and in the extracting supers as well, and who use them interchangeably. This is not saying that it is not better to use shallow extracting-frames. But it is saying that the advantage of interchangeableness is an advantage of having the same frames above as below, and *not* an advantage of shallow over deeper frames.

The second advantage claimed is the chief one, and "is *the main reason* why the divisible brood-chamber hive was adopted." This second and greatest advantage is based upon the fact that in deep-frame brood-chambers "the bees store a rim of honey above the brood and up to the top-bars and seal it there." This objection is overcome by using the divisible brood-chamber. Frankly, this is enough to warrant making the change, and is sufficient explanation for the warm place the divisible brood-chamber has in Mr. Scholl's affections.

But, Mr. Scholl, do you really think this appeals to all others as it does to you? Certainly it does not to me. I have no trouble about that rim of honey in brood-combs above the brood. At the time when it is needed my bees rear brood clear up to the top-bar, leaving not a single row of cells to be occupied with honey. If there has been a rim of honey there, I suppose they empty out the cells and fill them with brood. With a poor queen there may be a rim, right in the height of brood-rearing. Later on, toward the close of the season, a rim is begun at the top-bar, gradually extending downward until there is more honey than brood. And this is as it should be.

Now what makes the difference in our experience? Are your queens too poor to keep the frames well filled? I do not believe it. Do differences of climate, pasturage or seasons have something to do with it? Possibly. But I have a little suspicion that the combs in your deeper frames had something to do with the case. The complaint is only too common that the queen does not occupy the cells within an inch or two of the top-bar, and it has transpired that in many cases the cells were not exactly right because the foundation had stretched near the top-bar. With the right kind of wiring or splinting the cells at the top of the comb may be just as good as at the bottom. You probably remember that it was taught by high authority that brood-frames should be wired horizontally, and that the wires should be left slack to allow for the sagging of the foundation that would occur! With the foundation fastened at the top-bar and sagging below, what else could there be but stretching of the cells near the top-bar? Fortunately, I did not have occasion to fill frames with foundation at the time that wave was at its height, so was not caught in it. Possibly you were. Of course, I don't know, and don't pretend to say that this was the trouble with you. I only know you had the disadvantage of that rim of honey with deeper frames, and that it is not a trouble inseparable from the Langstroth frame.

The third advantage claimed is that with shallow brood-frames there is not the same need of heavy foundation or of wiring as with deeper frames. That claim is entirely valid.

The fourth claim—a claim which occupies nearly one-half the article—is the claim that there is great advantage in having shallow frames in the super. This claim is well made, and it would be hard to gainsay a word in it. But please play fair, Mr. Scholl. What under the sun has the advantage of a shallow super to do with the question you are answering? Please remember that the question you placed before yourself to answer was, "What are the advantages of the divisble hive?" Whatever advantage a shallow super may have, surely you can not claim that it is an advantage possessed by a divisible hive and not by a Langstroth. You might just as well claim that the movable frame was an advantage of the divisible hive. Just a little while ago, when speaking of "this day and time of shallow supers," you talked as if only shallow supers were used over deep frames, and now you talk as if shallow supers were used only over shallow frames. While it is true that thousands use deep frames above and below, it is also true that thousands use shallow supers who have never thought of using shallow brood-frames. The Dadants, for example, use brood-frames considerably deeper than the Langstroth, yet they use shallow extracting-supers.

Some of the things that you lightly touch upon in the closing paragraph you might well have enlarged upon, omitting some of the paragraphs that have no bearing on the case.

C. C. M.

American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address this office.

MISCELLANEOUS NEWS ITEMS

Bee-Inspection in Ontario.—Under the lead of the progressive Provincial Apiarist, Morley Pettit, some things have been done in Ontario that are worthy of imitation. A very serious difficulty in the way of foul-brood inspectors is the difficulty of getting over the ground fast enough, with so much ground to get over and so few men to get over it. If the inspector could spend a half-day or a day with each bee-keeper, giving him full instruction and showing him just how to do in treating a diseased colony, much advance could be made. Failing of time to do that, those Ontarians are gathered in bunches, and demonstrations are given. As Mr. Pettit wisely says in his report in the Canadian Bee Journal:

> The inspector can not afford to show every one individually how foul brood is treated. He must simply give an explanation, leave printed instructions, and go on But if a score or more people, by appointment, meet in an apiary, he can meet with them and show the lot at one time exactly what the disease looks like, how it should be treated to cure, and how wax can be saved from the diseased combs.

Twenty-seven demonstration meetings were held in various parts of the Province, with from 10 to 75 bee-keepers in attendance at each meeting, the average attendance being about 30. It will be seen that by this method of procedure 30 times as much is accomplished as by the usual method of taking each bee-keeper separately.

As Mr. Pettit has not taken the precaution to copyright the plan, it would be nothing strange if it should be brought across the line.

◆

The Ivy Bee-Rranch, near Phoenix, Ariz., is shown on the first page this month. It is near the Salt River irrigation project. A profitable industry is being developed on many of the Government irrigation projects in the production of honey, and press reports from State and County fairs held last fall indicate that the quality of this honey is superior. The flavor is exceptionally fine, and the color clear and sparkling. Alfalfa is the chief source from which the bees secure their supply, and as it blooms constantly from early spring until late in the fall the bees have something to work on all the time, allowing a greater amount of honey to be stored.

Many of the projects are located in famous fruit-sections, and the combination is found to be of mutual advantage. The trees furnish some honey during the blossoming period, and orchard men say that the economic importance of the bee, from the standpoint of its value in the pollenization of fruit, can not be overestimated. White clover and small fruits, and in the plains regions many varieties of wild flowers also furnish sources of supply.

The bee-industry is a lucrative sideline for the regular farmer, but there is also a wide field for the bee-men on these projects where everything tends toward specialization, and where the farmers organize for the standardization and marketing of their crops. On nearly all the projects small tracts for the purpose may be purchased at reasonable rates. On many of them there are model towns laid out at intervals of a few miles. The business lots are grouped around a central square, and near the outer boundaries of the two townsites the lots contain several acres each. These large lots, surrounded by wide areas of new agricultural lands devoted largely to the raising of alfalfa, are ideal locations for apiaries. They are sold at very reasonable rates, and afford opportunities for engaging in a business which pays large returns on the investment.

The average price of bees in the West is probably about $5 a colony. The manager of a large apiary on one of the irrigated tracts gives the average production of his colonies as 76 pounds of surplus honey per annum. At 10 cents per pound the returns would be $7.60. In addition to that the increase averages 100 percent from year to year, doubling the original investment and making a total of about 150 percent profit each year on the original investment.

The Statistician of the Reclamation Service at Washington, D. C., will furnish detailed information concerning lands irrigated by the Government, upon request.

◆

Bees and Poultry in the U. S.—According to the report of the Bureau of Census, in the year 1910, for every dollar invested in bees in the United States there was invested in

Chickens	$13.52
Turkeys	.64
Geese	.31
Ducks	.15

◆

"**Sweet Clover**, or Farmers' Bulletin No. 485," was recently received at this office. It is of uniform size with other bulletins issued by the United States Department of Agriculture, and contains 39 pages. It was prepared by J. M. Westgate, Agronomist In Charge of Clover Investigation, Bureau of Plant Industry, and H. N. Vinal, Assistant Agrostologist, Bureau of Plant Industry. It is indeed a most valuable addition to the literature already published on sweet clover. There are 16 illustrations. It gives detailed directions for growing sweet clover, and also tells of its great value for pasturage, hay and honey. Some years ago sweet clover was considered a noxious weed by those having a surplus of ignorance. The opposition to it was one of the most senseless things imaginable. Sweet clover is of such great value, and in so many different ways, that it is surprising that it has taken so long a time to discover it. It will pay every bee-keeper, as well as farmer, to send for a copy of Farmers' Bulletin No. 485, and read it carefully. The more general growing of sweet clover will not only be of great benefit to farmers, but to bee-keepers as well. Address, U. S. Department of Agriculture, Washington, D. C.

◆

Honey-Guide Bird of Africa.—John Burroughs, naturalist, wrfter and horticulturist, when in Chicago last season, told of Theodore Roosevelt's ornithological attainments, and of how at one time when the ex-president had invited the naturalist to his country place the two came out even in the number of birds they could point out and name.

"He could teach me as many new birds as I could teach him," said Mr. Burroughs. "When he was preparing to go to Africa, I asked him to investigate the story about the 'honey-guide' bird, which is supposed to lead the hunter to a tree where bees deposit honey, the so-called honey-tree. I did not believe the story.

"I hardly thought Mr. Roosevelt would remember my request, but at his son's wedding, after his return, when he cought sight of me, he came rushing up and exclaimed enthusiastically, 'It's true about the honey-guide; we tried it 19 times, and it always worked. The bird does it to eat the comb we leave. It was just as if it had been waiting expressly for me.'"

◆

Lying in Advertisements.—Dr. A. F. Bonney sends us the following on misrepresentations in advertisements:

> EDITOR AMERICAN BEE JOURNAL:—Since my last article about advertising, in the 'Old Reliable," I have done considerable 'writing in regard to the matter of deception in advertisements, and find that there is a widespread interest in the matter. All over the United States business men are taking an interest, and I foretell that within a short time it will be impossible to find a publication which will allow the word "cure" to be used in an advertisement in connection with medicine, apparatus or mental effort. It will, also, I believe, be criminal to send such an advertisement through the mails.
>
> I have from time to time in the past half-year made notes from proposed laws in regard to advertising, seeing the time coming when I might need them, and the law proposed below is the result, copied almost or quite as it was proposed before the Des Moines Admen's Club. Possibly it may be improved on, but it looks good to me:
>
> "Any person, corporation or association who, with intent to sell or in any manner dispose of merchandise, securities, services, or anything offered by such person, firm, corporation or association, directly or indirectly to the public for sale or distribution, or with the intent to increase the consumption thereof, to induce the public in any manner to enter into any obligation relating thereto, or to acquire the title thereto or an interest therein, makes, publishes or disseminates, circulates or places before the public in this State, in a newspaper or any other publication, or in the form of a book, notice, handbill, poster, bill, circular, pamphlet or letter, or in any other way, an advertisement of any sort regarding merchandise, services or anything offered to the public, *which advertisement contains any assertion, representation or statement of fact which is untrue, deceptive or misleading, shall be guilty of a misdemeanor.*"
>
> Several States have passed laws forbidding the word "cure" to be used in a "patent-medicine" advertisement, other States will do the same, and even now a National law has been proposed. If I remember, a Bill was recently introduced in the House of Representatives.
>
> This is as it should be, for speaking from more than 30 years' experience in experi-

menting with remedies. I am satisfied that there are not half a dozen radical cures at the command of physicians, and some of them the modern serums. Any experienced doctor will confirm the statement that we have no "cure" for rheumatism, eczema, pneumonia, catarrh, cancer, and so on down the list of human ills, and any advertisement claiming otherwise will come under the above proposed law

It is but a step from medical advertisements to food advertisements. The many "breakfast food" fakirs would have to modify all their literature; and, coming to what interests us most, the corn syrup (glucose) manufacturers would have to quit lying about honey, the only *perfect* sweet the Lord ever gave to man.

If the State of Illinois has not yet done anything to suppress this evil of fraudulent advertising, I suggest that the editor of the American Bee Journal send marked copies of this issue to the State legislators, as I shall to those of Iowa.

I am still ready and willing to donate to a fund, as suggested in my January article.

Buck Grove, Iowa. A. F. BONNEY, M. D.

While this subject is one not directly bearing on bee-keeping, yet it is something in which every bee-keeper is interested. There are advertisements in all the bee-papers, but we believe not one of the bee-paper publishers would knowingly accept an advertisement that contained an intentional misrepresentation. But there are many publications that care more for money than for reputation for truth and honesty. The subscribers for such publications should refuse to continue their subscriptions unless the misleading advertisements be eliminated.

This subject will doubtless soon be considered by the law-makers, and an effective prohibition be enacted and enforced. The tendency of the times seems to be along lines that will make for a higher and better morality, both in private and public life. May the good work be hastened.

◆

Origin of the First Kiss.—A contributor to the British Bee Journal gave the following some time ago concerning the "first kiss:"

> "It was a beautiful morning that Father Adam returned to his dwelling and found Eve fast asleep. He bent down over her and observed the bees flew around her head, alighting on her mouth! He bent down lower and lower, and at last touched her mouth with his lips, and found that it was so sweet, so sweet!"

We wonder if most of the "daughters of Eve" wouldn't wake up if bees were alighting on their honeyed lips!

We suppose this item really belongs in the sister's department, but we feared its "conductress" might object, so we put it here to be on the safe side!

◆

Everybody's Paint-Book.—On another page we are offering a book entitled "Everybody's Paint-Book," which would be a good thing for everybody to read who has any painting to do. There are many bee-keepers who paint their hives and also houses and other other buildings, so that we believe any one who is at all interested in the subject of ordinary painting would find "Everybody's Paint-Book" very valuable. It is bound in cloth, and contains important information on the subject of paints and painting. The postpaid price is $1.00, or we send it with the American Bee Journal one year—both for $1.70. We also offer it as a premium for sending 2 new subscriptions to the American Bee Journal, at $1.00 each.

◆

A Snowbound Apiary.—The picture herewith shows an apiary packed in snow. Its owner has this to say about it:

A SNOWBOUND IOWA APIARY.

> I am sending a picture showing a part of my apiary taken about 2 weeks ago, after removal from the cellar. The snow, however, lasted but a few days, and it did not get very cold.
>
> The bees did very well in this locality last year, considering the kind of season, as it was rather dry. HOMER MIDDLETON.
>
> Eagle Grove, Iowa, Jan. 17.

◆

The Series of Ten Pictures at the bottoms of pages in the department of "Contributed Articles" are described as follows:

No. 1 is a small yard of 30 colonies of bees in Maine, which in 1910 produced 50 pounds of comb honey and 50 pounds of extracted honey per colony. The bees are all in chaff hives, are wintered outdoors, and are well taken care of by the owner.

No. 2 shows the owner of the foregoing apiary holding a frame of bees.

No. 3 is a still smaller bee-yard that is also wintered outdoors.

Nos. 4 and 5 show one of the handiest things in the shape of a comb-cart. It will hold 12 10-frame supers, or with a comb-box the frames from 4 hives. In fact, the comb-box will hold 45 spaced frames. The third wheel takes the weight off the hands and allows getting the handle out of the way of doors, frames, hives and the like.

No. 6 shows a way of handling a swarm which, perhaps, has not been seen in print. Old, dead mullein-heads are tied to the end of a pole—5 or 6 of them. This is held under a swarm that has clustered on a limb out of convenient reach. The bees are then shaken from the limb with another pole with a hook on it. The dead mulleins look much like a swarm, and some bees will alight on them. The limb is then shaken again and more bees alight on the mulleins. Soon all are there. If you are then careful you can do what you please with the swarm. In this case they were taken back to the hive from which they came. The queen-cells had been removed and there they stayed.

Nos. 7 and 8 show the extractor, uncapping-can (round), and the like in a large yard. Now all is changed, and a gasoline engine and an 8-frame extractor take the place of the old-fashioned ones.

No. 9 shows the honey-tank in a large yard for ripening honey. Some people think they are not used much, but perhaps they are mistaken about this. The honey ripens in the tank.

No. 10 is simply a bee-yard and honey-house. The writer seldom looks at this picture but he thinks of the many articles he has read of bee-yards a mile or 1½ miles a part, and telling how much better one bee-yard did than another, and drawing the conclusion that the country near one was overstocked. Now here, one side—the eastern—always does better than the other, but I hardly think it is location in the sense of distance from flowers, as there is only a 7-foot path between them; yet these bees winter in the same cellar, and are always put out in the same way without any change whatever.

EASTERNER.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Wintering Conditions in the West

The snowfall has been heavier than last year, and the winter more severe, but bees are coming through in fair condition. Some report rather heavy losses, while others report none. Prospects are good for an abundance of water for irrigation, and with a wet spring alfalfa and sweet clover will make a good start.

It is my judgment that Western bee-men are losing a good deal by not using the double-walled hive, or at least a winter-case. I was talking with my uncle, Oliver Foster, the other day, and he said that he considered our Colorado sunshine as salvation for the bees in winter, and that the south side of the hives should be exposed to the sun so that it would warm the hive quickly after the sun came out. He thought extra protection on the other sides might be all right.

If a winter-case could be devised that would lift off and on easily, it might be an advantage, for it could be removed on the warm days or left off as long as the weather was mild. This would not meet with the endorsement of the large bee-men, for they would not relish the idea of making trips to each out-apiary a dozen times each winter.

The Drone a Son of His Grandfather

Who can tell how much of a disturbing factor parthenogenesis is in the breeding of bees? A drone is not the son of his father, but is the son of his mother only, but his mother is a daughter of her father and mother, so that would seem that a drone is a son of his grandfather. So there you are—parthenogenesis is but a skipping of one generation in parentage. I am rather expecting some one to knock a hole in this statement, but I set it up as a target in order that I may learn from the drives made at it. If a drone is the son of his grandfather, taking this into account is there any great difficulty in breeding a better bee than if he was the son of his father?

The Honey-Flora Acreage

I like to estimate as nearly as possible the acreage of alfalfa and sweet clover within 2 miles of an out-apiary. There is the railroad running within a quarter of a mile of the bees, and there sweet clover lines the track for nearly 2 miles. There is 5 or 10 acres of sweet clover along the track. Then nearly every ditch-bank is lined with sweet clover, making perhaps 5 acres more. That 40-acre farm that the heirs have gotten into litigation over has been taken by sweet clover—the lawyers will get it after a while, but we can rest assured that sweet clover and the bees will have it for a few years, anyway. While it lasts I think that "forty" is worth pretty near a hundred dollars a year to my bees.

Now about the alfalfa: By setting down the acreage I find that there is about 600 acres of alfalfa within 2 miles or about 25 percent of the irrigated land. Then there is alfalfa in the wheat, which, in some cases, where the plowing was not done well, is mostly alfalfa, and perhaps the farmer decided in August that he will cut it for hay instead of putting in the binder. Alfalfa is hard to break, and every crop of wheat on alfalfa breaking has a lot of alfalfa in it. This gets and stays in full bloom until the bees get all the nectar.

Half of this 600 acres of alfalfa is cut before it gets in bloom the first time, and so is worth nothing to the bees; but wait until August, when the wheat harvest is on, and the alfalfa stands in beautiful purple bloom. Ten years ago there was over a thousand acres of alfalfa in this area, but the growing of sugar-beets has cut down this amount. Alfalfa is rising so in price that more acreage is going back to alfalfa now, but this higher price also is the cause for it being cut earlier, as it is more desirable for dairy use than when left until in full bloom.

There are districts in the West where from 75 to 90 percent of the acreage is in alfalfa, and these are the favored districts for the bee-men; but where we have an abundance of sweet clover and alfalfa in the wheat, we get honey if the season is favorable.

What is the Parcels Post Worth?

A few years ago I was talking with a young man from Switzerland, who had just finished college there. He was telling of his college experiences, and remarked that he sent all his laundry home a distance—if I remember rightly—of 75 or 80 miles, by post, and that it cost him but a very few cents to do this. This is an example of the uses to which the Parcels Post is put in Europe. It is a great help in getting things quickly and cheaply from one place to another. There are so many uses to which the Parcels Post would apply that we can not realize the benefit that would come from it.

The strongest advocates of the Parcels Post are those who have lived under its influence in Europe. They are anxious for its introduction into this country so they can reap its benefit.

Now is the time to write a letter to your senators and congressman at Washington, urging the passage of effective Parcels Post legislation. We are bound to have such legislation sooner or later, and the sooner we get it the better. The bee-keepers can not realize the full benefits they will derive from it—if they did there would be a very insistent call for such legislation, by the writing of thousands of letters.

Have a Letter File—Other Bills in Congress

When we read in the newspapers of some Bill before Congress, the passage of which we greatly desire, why do we not sit down and write to our congressman and senators? I'll tell some of the reasons that I think cause us to neglect it. We can not think who our senators and congressmen are. Pen and ink and paper are not easily found, and we are out of stamps and envelopes. We think we do not know how to write a letter to a member of Congress and have it in good form. "And, anyway, my letter would do no good, so what is the use?"

Now here is a suggestion: For 35 cents, a letter file may be bought at the book-store. If you do not have business letter-heads and envelopes buy a box or a pound of good stationery. Good bond-paper typewriter-letter size, can be bought of almost any printer for 25 cents a pound. For convenience, buy stamped envelopes, and save the bother of hunting stamps. Now put this material together with a pen into this box, and if it is a fountain pen all the better—then you will not need to hunt up the bottle of ink.

Now on the inside of the lid to this letter-file paste a sheet of the bond-paper spoken of, upon which you have written the names and addresses of your public servants from the president of the United States down to the alderman from your ward—if you live in town. It may help some to have the year when their term expires set beside their names. If your list is a long one you will do well to designate the office each holds, so that you will not be writing to a State Senator to support a Bill that is before the National Congress.

With a box of this kind—which is your "postal ballot-box"—you can quickly write to any of your public servants on any question you wish to, and if you want to you can keep a copy of each letter sent, filed away in the box, the compartments of which are arranged alphabetically. Then you can file the letters you receive from the gentlemen. If you follow it up you will soon have a pretty definite idea as to the efficiency of your servants, whether they are direct and to the point, or are evasive in their answers.

Will you get your "ballot-box" and use it? It will be one that you can use every day in the year. On the outside will be printed, "LETTERS From *Mr. Common Citizen* To his *Hon. Public Servant*."

Now as to the way to write these letters, I would suggest that they be written as any other business letter is written, brief, gentlemanly, and to the point.

"But where can I get the names of these men?" You can get them from your local editor, no doubt, or some lawyer who is in politics—from almost any well-informed citizen. The officers of local political organizations are very well able to furnish the information.

Our County, State and National Governments are carrying on our public business. Public business affects our private welfare, and if we do not take a hand in controlling the forces that affect our private welfare we have no one to blame but ourselves, if we do not get what we think are our rights.

The Inter-State Commerce Commission could be well included in the list of public servants, and but a little study of rates on honey and bees would reveal gross discrepancies, that if brought to the Commission's notice, and pushed, would bring relief.

I have said it. I am done, and I feel better. This has been on my mind for some time; I hope it is on yours in such a way that it will bring action. We can all pull together and get what is right—in time.

"Advanced Bee-Culture."—A new edition of this book, by the late W. Z. Hutchinson, of Michigan, is one of the practical and up-to-date books for the specialist bee-keeper ever written. Its 200 pages touch on nearly 500 subjects pertinent to modern bee-keeping, and all are discussed authoritatively. It has many fine illustrations. It is bound in attractive and substantial cloth, with a clover design in natural colors on its cover. All together it is a volume whose appearance and unquestionable worth justly entitles it to a place in the library of every bee-keeper. No more important work on the subject has appeared. It is mailed for only $1.00, or with the American Bee Journal one year—both for $1.80. Send all orders to the office of the American Bee Journal, 117 North Jefferson Street, Chicago, Ill.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Difference Between Ontario and North Carolina

In a letter just to hand from my father, who is spending the winter in North Carolina, he tells me that they are planting cabbages, onions, etc., where he is staying. The cabbage they plant so early is very hardy and will stand quite hard freezing with no ill results, and he asks how soon he can mail me a few plants to see how they will do in our climate.

As I look out of the window in the direction of our garden, and see that there is two feet of snow all over the ground, his question seems quite amusing, and I guess the change of climate he has experienced this winter has made him forget what our Canadian weather can be like even on March 15th, when we happen to have what the old settlers call an "old-fashioned" winter.

March up to the date mentioned was very fine so far as sunshine and absence of storms are concerned, but it has been unusually cold, in keeping with the former two months. As a result our roads are still deep with snow, and there is still a covering of "the beautiful" all over our fields. Bees have not had a flight as yet, and it is really surprising how they can stand such a long, cold spell of weather like we have had since early in January.

As already stated, our garden has 2 feet of snow all over it, so needless to say I am directing father not to trouble shipping cabbage-plants to us until further notice.

Facing of Hives in Winter

Editor Root, in summarizing wintering conditions in their own apiaries, says that the bees in hives facing north have not wintered quite as well as those facing other directions. A number of our best men here in Ontario claim they see no difference in this matter, while I have no *positive* evidence to refute their claims, yet I confess to being prejudiced againt a north entrance in our climate for wintering, and always give the other points of the compass the preference. In the early spring, a north entrance is sometimes a great advantage, while, on the other hand, should the bees be in urgent need of cleansing flight, sometimes hives facing south will allow of such a flight, when those in hives facing north would have no such chance.

Bee-Keeping and the "Better Farming Special"

The "Better Farming Special" fitted up by the Department of Agriculture for Ontario, and run over the Canadian Pacific railroad, passed through our section a few days ago. On this train bee-keeping was represented, and we had the pleasure of meeting Mr. Pettit and listening to a lecture by him during the stay of a few hours made at the station. Lack of space forbids saying more at present, but in the next issue I hope to give a few items. Suffice to say that we had a joke on Mr. Pettit, when we reminded him that there was a *staple* on the frame he was passing a capping-knife over. More anon.

European or American Foul Brood

Mr. Greiner, in telling about treating foul brood in his apiary last summer, does not state which variety of the disease he is "up against." By reading the article I would judge that it is European foul brood—what we commonly called black brood a year or so ago. I merely mention this matter to point out how easy it is to have confusion with two names so nearly alike for two diseases that act so very differently. I was never in love with the term "European foul brood," and my affection for it is not increasing with age.

"Virulent" or "Malignant" Foul Brood

What do we understand by the terms "virulent" and "malignant" as applied to cases of foul brood? I confess to having used the terms both in print and in sending in reports of inspection when engaged in that work, and after all I just wonder if the terms are not misnomers so far as our understanding of the matter amounts to. We know so little about black brood (European foul brood) that I would not discuss the terms in relation to that disease, but so far as our old-time friend Foul Brood (American foul brood) is concerned, I have yet to see one case more "virulent" or "malignant" than another, and, in using either of those terms, we generally mean rather to designate how bad a colony is affected than to intimate that the disease is more virulent or malignant than any ordinary type.

I have been led to think over this matter of nomenclature by reading in the British Bee Journal for Feb. 29, how D. M. Macdonald is "rubbing it into" advocates of non-disinfection of hives and other fixtures." He quotes from the Foul Brood Act of Ontario the following clause:

> "Whenever the Inspector is satisfied of the existence of foul brood in its virulent or malignant type, it shall be the duty of said Inspector to order all colonies, etc., to be immediately destroyed by fire."

Now, I admit that the words of that quotation certainly imply different types of the disease, yet, in common practise, I'll wager dollars to doughnuts that all the inspectors would condemn colonies that have the disease so far advanced as to make them practically useless and not worth saving.

As intimated, I am yet to be convinced that there is any difference in the types of the old-time foul brood—it is simply a matter of how long a colony has been affected, or as to the conditions that have prevailed *after* the infection was conveyed to the hive.

Let me whisper to Mr. McDonald, that although the quotation about disinfecting hives, etc., as embodied in the Ontario Act, is stringent enough, yet, as a matter of fact, very few Canadian bee-keepers believe in disinfection to the same degree as seems to prevail on the other side of the pond; and as to using drugs for the treatment of the disease, not one man in a hundred would for a moment think there is any efficacy in such lines of treatment.

A peculiar thing in connection with this latter matter, is that while drugs seem to be very popular for foul brood treatment in the British Isles, I have yet to meet the first man from the "old sod" who professes to have any use for them since in this country. We have a number of very smart men engaged in the craft who come under the heading referred to, and if there are any of a different view from what I have represented, I have yet to meet them.

Some Failures in Bee-Keeping

On the same page where Mr. Macdonald speaks of the disinfection question, he has a word to say about the common mistakes made by beginners in bee-culture. He summarizes them under two heads—failure to bring the colony into the right condition by the time the main honey-flow begins, and failure to have the colony in the right condition for winter.

He says that under the first head a loss of crop will result, and under the second a loss of the bees themselves. I am not sure but what we could, on the most cases, put the two causes under one head—the second one given by Mr. Macdonald. If bees are put in *proper* condition for winter, the first cause he gives will be headed off already. And the bees need not *die* to render invalid all the work that can be given in the spring, as many colonies survive the winter that are of no use for a crop of honey the next season, no matter what kind of attention may be given them in the spring.

The longer I keep bees this fact is more forcibly impressed on me each year, that the bulk of the preparation for getting the bees ready for the next year's crop must be done in the fall. Given abundance of good stores, and proper packing for outdoor wintering, or a good place for inside wintering, there need be little worry about getting the bees ready for the honey-flow when it comes, be it early or late in the season.

This present hard winter I have a few colonies outside with no packing around the hive, but having lots of dry material over the tops. While this has answered in some seasons, this winter will tell a different tale, and you may rest assured that any *spring* attention that I may give the survivors, will not make up for what could have been done last October.

CONTRIBUTED ARTICLES

Artificial Swarming or Dividing of Colonies

BY G. M. DOOLITTLE.

A correspondent living in the middle Southern States wishes me to give an article in the American Bee Journal telling how bees can be made to swarm at will, or increase be made artificially whenever the bee-keeper desires, this being applicable to the man who can not be at home during the hours of the day from 9 in the morning to 4 in the afternoon, or to the one who has one or more out-apiaries.

During the past, there have many plans of division of colonies been given, such as dividing the bees, brood and honey about equally, putting half in a new hive and giving the queenless part a new queen or queen-cells; or taking a frame with brood and honey from the old colony, together with the queen, and setting this with frames filled with comb foundation in a new hive, when the old hive was to be carried to a new stand and this new hive placed on the old stand, doing this changing and work at a time when many bees were flying, so that the larger part of the flying force of the hive would go into the new hive with the queen. The next day a ripe queen-cell was to be given to the old colony, so that in due time both colonies would be headed by good queens. For a quick, simple plan of artificial increase, probably this last is as good as any in the hands of a beginner. But it is not quite equal to any plan which causes the bees to fill themselves with honey, when a good yield of honey, as well as of increase, is desired.

Causing the bees to fill themselves with honey, similar to that done by the bees when swarming naturally, gives an artificially-made colony nearly as much energy as has the natural swarm.

Before the introduction of the movable-frame hive, the late Elisha Gallup, then living in Iowa, told us through the columns of the American Bee Journal, how to make "natural swarms artificially." This was done (by "forcing" swarms) by drumming on the old box-hive after it was turned bottom side up, with a box put over it, into which the bees would crawl after they had taken all the honey their honey-sacs would hold, as they always will when they are thus driven from their old home.

When in the box it was taken to a shady place and leaned against the body of a tree, the open side of the box facing out toward the light. If the queen went up into the box with the bees this forced swarm would stay clustered in the box the same as any natural swarm would hang on a limb. This process of causing them to gorge themselves with honey, and then to remain clustered as a swarm, causes the bees immediately to begin the process of necessary secretion of wax the same as does the natural swarm. It also causes them to adhere to a new location the same as will a clustered swarm when hiving it from the limb of a tree.

The box of bees was left in the shade from 10 a.m. until 2 or 3 p.m., when they were hived as a natural swarm, and to all intents and purposes were in every way equal to the same. In this way the man who could be at home only in the morning could make his swarms, get good results in honey, and not be worrying all the while when he was away from home, fearing the bees would swarm during his absence and fly away to the woods.

With out-yards the apiarist is compelled to take this swarming matter into his own hands, and if he is a progressive bee-keeper he will find that the nearer he can keep to Nature's methods, while at the same time he is accomplishing his desired purpose the better, or more successful he will become. But with the movable frames a our command, instead of driving the bees as was necessary with box-hives, it is much more convenient to shake the bees. And at times when the flowers are secreting nectar abundantly, or to such an extent that the thin nectar will shake out from the cells when the bees are shaken off the combs, so that the bees are more or less daubed with the same, they will be sufficiently gorged for our purposes without any further preparation than simply shaking them into the hive which we wish them to occupy. But where we do this without causing them to cluster, as is often done at the out-apiary so as to economize time, it is necessary to leave the hive into which they are shaken on the old stand, for, otherwise, the bees would mostly leave and go back to their old home, thus thwarting the purpose which we wished to accomplish.

As to the wax-secretion necessary with a flow of nectar as above described, all the bees of suitable age for comb-building would already have wax-scales in their wax-pockets, so that it would not be necessary for them to be set aside to cluster 5 or 6 hours. But where swarms are to be made at times when nectar is not abundant, some pains must be taken to have the bees fill themselves with honey and allow them to cluster if the best results are to be secured. Then, where the old colony or hive is to be placed on a new stand there should always be enough bees left when shaking to protect the brood properly. When thus shaking the bees in a 10-frame hive I always leave 3 frames without shaking. What bees adhere to these 3, and those which will be all about the inside of the hive seem to be sufficient to care for the brood of the whole hive, when this is set on a new stand.

When working thus at the out-apiary it is well to carry along a ripe queen-cell in a queen-cell protector for each old hive from which two-thirds of the bees and the old queen have been shaken.

In making new colonies in this way it is best to do this work before the bees have prepared for swarming, but not until the hives have become populous with bees. If deferred until they

No. 1—Apiary in Maine—Averaged 100 Lbs. in 1910.

No. 2—Owner of Opposite Apiary Holding a Comb.

are about ready to swarm, they often will swarm out after being made, which may result in their loss if the queens' wings are not clipped, and the loss of queen through her not being able to get back with the returning swarm, where she is clipped.

At the home yard comb foundation or starters may be put in the frames at the option of the apiarist. With the foundation will come more expense, while with the starters will come more work; for with the best management there will be quite a little drone-comb to cut out and replace with that of the worker size of cells. For out-apiary work I should fill the frames with foundation, for with the necessary journeys needed to get rid of this drone-comb nuisance would come an expense of time more than to make up for that of the comb foundation.

Borodino, N. Y.

Marking and Color Indications of Bee-Parentage

BY ARTHUR C. MILLER.

So long and so absolutely have bee-keepers depended upon the "three bands" of the Italians as an indication of purity, that it will not be easy to convince them that such markings alone are not a sufficient criterion.

The development of the golden type of Italians, and the subsequent introduction of new types of black bees, have served to reveal some rather unexpected color-variations. Study of patterns and color-shades of the Goldens showed a breaking up of the typical "striping" or "banding" with which we have for so long been familiar. Blotched and spotted bees were numerous. One strain under test developed bees which had only the terminal segment of the abdomen black, the other segments showing two shades of yellow bands, one a rich golden orange, the other more nearly a lemon yellow. The bees of one queen were most beautiful to behold, and, until frost shut them in, were the object of frequent observation.

On a bright and balmy day of the following spring, several persons who had been studying them, went again to the hive, when lo, not a single golden bee was to be seen. Every one was striped black and yellow. Five stripes were visible, the black having somewhat of a brown tinge. The hive was the same, that was sure, but whence those bees? Inspection of the inside revealed the original queen, and it also showed every bee emerging from the cells to be like the beautiful goldens of the season before. The explanation is believed to be this:

The cold weather had caused the deposit of pigment in the cells underlying the chitinous walls of the abdomen. The variation of color in butterflies and moths caused by cold experienced in the chrysalis stage is well known, and variations in color of mature insects, as cited above, are also on record.

By selection in breeding spotted patterns were developed, and, evidently, had it been worth while, such a type of bee could have been "fixed."

A daughter of a Banat queen was mated to a Golden drone, and the worker offspring were uniformly marked "three-banded leather-colored Italians."

The queen would have passed for a dark Italian, and the handsome, great bees with their excellent working qualities might easily have led any one looking for a good breeding queen, and unacquainted with her ancestry, to have selected her as being most desirable. When her drones appeared, however, they were typical Banats, and revealed the ancestry.

Golden queens mated to Banat drones gave the same uniformly banded workers, though of a little lighter shade. The lighter color of the queen, however, would have aroused suspicion as to her purity, in the mind of any one conversant with color inheritance. Of course, when her drones appeared the blood was apparent.

Now, the results of the crosses of these high-bred strains showed clearly the danger of the current method of selecting breeding queens. Color and marking of the workers alone are not to be depended upon.

Queens were reared from the above-mentioned Golden strain, and the cells were caged and placed so as to subject different cells to different temperatures. Those in normal heat hatched promptly, and the queens were typical in color. Others less well cared for hatched later, and the queens were darker, and so on down the scale until a condition was reached where the cells failed to hatch. A difference was noticed by caging the cells at different periods after sealing. The sooner after the time the darker the queens, more cells failing to hatch, and the greater the need of having the cages in the very heart of powerful colonies to get them to hatch at all.

Comparison of the young queens reared under the different conditions showed marked variations, the typical goldens at one end, and at the other, queens so dark that would be considered to be of an entirely different stock. Under normal conditions, queens from the stock used were remarkably uniform.

Bee-keepers have learned by experience to look upon "small, dark queens" with disfavor, and rightly so, for smallness and darkness usually mean that the queens was reared with a scantiness of food, and in a temperature below normal.

Size alone does not necessarily indicate inferiority. A certain queen gave queen-offspring which varied most markedly in size. Some were even smaller than workers, yet were perfect queens. These tiny queens never mated, though other queens much smaller than normal did, and they proved excellent. One of the smallest was the most remarkable egg-producer the writer ever observed. This queen, which could slip through excluder-zinc more nimbly than a worker, would fill with eggs one Langstroth comb, and nearly a third of another, in 24 hours, and every egg was placed in exactly the same position. The combs, it should be noted, were perfect ones, built on wired foundation.

With the tendency to sport in size went a variation in work, and in excitability (temper), and the queen producing the bantams was killed. Her workers and her drones varied in size, though not so markedly as the queens. Had time permitted, it would have been interesting to have seen how small a strain of bees could have been developed. Man can do about as he pleases in bee-breeding, even though he can not mate his queens in enclosures; but this is another subject.

Providence, R. I.

No. 3—A Small Apiary Wintered Outdoors.

No. 4—Apiary Comb-Cart Full of Combs.

The Blending of Honeys

BY OREL L. HERSHISER.

Referring to the remarks of Mr. Arthur C. Miller (page 49), wherein he quotes approvingly one who makes a practise of blending dark honey with his fancy and very white clover and basswood, the prime object in blending seems to be to work off dark and ill-flavored honeys, that command a low price, at the price of the higher grades. At any rate, bringing down the color of light honey by blending with it the darker grades, necessitates the use of the lower grade, as dark and amber honeys are never quoted as high in our markets as the white, of heavy body and good flavor, such as our basswood and clover.

It is doubted if any benefit will accrue to bee-keepers generally by advocating blending to alter color or body. In the hands of experts whose interests are identical with bee-keepers as a class, such as Mr. Miller, for instance, the reputation of our high-grade honeys might not be expected to suffer by blending honeys of approximately the same value as to color and body, for the purpose of modifying flavor only, such as basswood with clover or alfalfa, etc., but the result of blending, to an appreciable extent, the off-flavored, dark and thin-bodied honey with the white, heavy and delicious flavored is a medium-grade honey. That is the case with all markets with which I am acquainted. If the color, body or flavor is "off," we can not expect top prices. White, well-ripened honey commands the higher price because it has the flavor usually preferred by most consumers.

As to body, the highest perfection seems to be reached by allowing the bees to ripen it by leaving it on the hives long enough for that purpose. Excessively heavy honey is so rare that it seems to me a waste of time to bother tinkering it to get it thinner. If our honey should chance to be unusually heavy-bodied, let us congratulate ourselves on such occasions on having secured a crop of honey of past fancy grade, and try to get a price for it accordingly, and not put ouselves upon the apologetic by bringing down the color and body, and incidentally the grade and value.

Mr. Miller quotes the rules applicable to "telling tales out of school," but as one story calls for another, here goes.

WHAT THE RECORD SHOWS.

In one of the several very excellent addresses Mr. Miller gave at the Ontario Bee-Keepers' convention in Toronto in November, 1908, those paragraphs on the subject—"Side Lights on Marketing"—relating to color, flavor and body, were presented as follows:

With the extracted honey one has more to consider. Color seems to be of first importance. In Toronto, white honey sells readily, while in Rhode Island the golden-colored honey is the best shade for the market. When color is of importance, by blending a light and a dark honey the correct color can be obtained.

Flavor also must be considered, and the blending is again of great value in correcting whatever is undesirable in the honeys that may pass through the hands of the larger producer's in a season's operations.

A third point is body. An excessively heavy-bodied honey is not as desirable in the Eastern markets as the honey which flows reasonably easy. People there want honey that will pour out as a syrup. By using very thin honeys a better blend is made than by keeping the honey thick.

These points of the address were discussed as follows:

Mr. Sibbald—As to the quality of honey, as Mr. Miller says, we can't always control the source of our bees gathering honey, and the darker colors of honey are not worth as much here as the light honey. The people here want a white honey, especially in Toronto. In Montreal, I believe, they can use a darker honey, and that is a better market for it than Toronto. I believe the dark honey is on the increase, and I have heard some of our friends here do not think very much of buckwheat honey, but when we begin to work with it, and extract it and taste it, and get used to the flavor of it, we don't think it so bad, after all. It seems to me that there is a little field for bee-keepers to educate the people to like dark honey.

Mr. Hershiser—I don't think you can blend the real rank honey and get anything that will improve the quality.

Mr. Dickenson—I quite agree with Mr. Miller in regard to a bee-keeper building up a reputation of his own, let it be whatever character of label he may adopt. I think it does not matter what the other fellow does, if you put up good goods that will recommend themselves; but you want to be sure you are right every time. I don't know that we could adopt those methods of blending honey here in Toronto, that Mr. Miller mentions. The flavor of basswood honey is different from clover honey. Sometimes those honeys are blended by the bees, and we can not help ourselves unless we are pretty sharp to take off the capped honey in the clover season. I think perhaps each locality or country has to have its own system before blending could be recommended.

Mr. Holtermann—There was one point in Mr. Miller's address as to the thickness of honey. As Mr. Dickenson has said, one country perhaps can not lay down a rule for another, as in the matter of blending, but in this country we have tried to educate ourselves as much as possible in the direction of having our honey as thick as possible, and what we are trying to get out of is selling thin honey. We find here our customers want a well-ripened article, and the better ripened we can have it, as long as it is not at the sacrifice of flavor, and the thicker we can get it the better our customers like it.

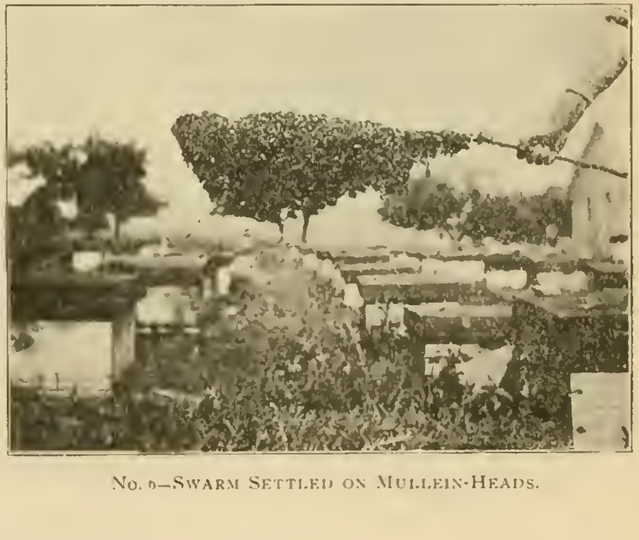
Mr. McEvoy—Mr. Miller speaks of blending honey, on the other side. On this side I would rather see each kind kept separate and sold according to its value. The mixing of honey does not go so well in this country.

Mr. Timbers—Some gentleman has said that the tendency is drifting to darker honey. What I have had in the last three years has been a little darker shade than what I have been used to, and I find the cry is, "Why don't you bring some of that light honey you used to bring years ago?" Again, Mr. Miller said he did not think the average housekeeper knew the difference; it was sweet, and that was all, and they wanted something thin to pour out. I find that is not the case in Toronto. They want something good and thick, and if it is not thick they will very soon call your attention to it. If you take a dozen glasses of honey, 6 of which are nice and bright, and 6 of which are dark, I don't care if the dark is a little the best flavor and is a little heavier, if you set them on the counter side by side, I am satisfied, in the Toronto market, that the 6 light glasses will go first, every time. That has been and is my experience today.

Mr. Chrysler—I think we can safely blend clover and basswood honey together in this country, but as to other flavors, I think we would be doing something very much against our own interest to blend them. Mr. Miller has said something about the consumer regarding honey as honey, and the uniformity of it is what we want to get at. We might find some honey in some locality of a superior grade. Probably the product of a whole locality would not average 50,000 pounds If it is good white honey, a good flavor, and a little better than the average, I don't think it would be wise to blend that with our regular clover and basswood honey, and make a uniform blend throughout. In regard to marketing in the Northwest, I think they are willing to pay a good price for a good article. They want the best article there, and they have the money to pay for it.

Mr. Couse—With reference to marketing I really believe that Mr. Miller has found the conditions here are different from what they are at his home, and I believe that conditions differ greatly in different districts. Mr. Chrysler has just made reference to the Northwest. I believe if Mr. Chrysler were to go West and produce honey such as they have, he might find that the honey they have produced in the West is what they want as badly as they do ours. I believe in the vicinity of Dauphin there is a great amount of honey produced. I know a grocer there who has bought all the honey he requires

No. 5—COMB-CART WITH EXTRACTING-SUPERS



No. 6—SWARM SETTLED ON MULLEIN-HEADS.

for a number of years to sell in the town of Dauphin, and it is all local honey, entirely different from what was gotten here, but the people there have been educated to the use of the honey produced there. I believe in Mr. Miller's vicinity they have no particular honey that they do produce. We think that is where his trouble is; therefore, he can't get it, or does not get it, unless he brings it from some other source. If we were to go to California I don't doubt but that the California orange honey is just about as good as their sage honey; either of them is excellent; but wherever the sage honey is consumed, that is where they want sage honey; and where they send orange honey, orange honey has the preference. In reference to people wanting a change, and the different flavors, I really believe that people who are in the habit of getting clover honey do not want anything else. I have customers I have supplied for 25 years, and I know they don't want anything else. My idea is this: When you have once created a market for a thing, keep on giving them that one thing. I believe in the Old Country they fancy the darker honey, such as sage, because they are accustomed to it. I believe in the city of Montreal, where they have been in the habit of getting buckwheat honey, they can sell much darker honeys than in Toronto. Toronto has been educated to use good honey. The matter of exhibiting honey here for 30 years has created a market in Toronto for good honey, and the same with other products.

Mr. Alpaugh—As to blending honey, I think that is one of the finest things that there is, if people practise it. For years I have blended my honey, and I have found splendid results from it. I never sell pure clover or pure basswood if I can get something to blend with it; it is too bright or "suspicious looking." If you can put about 100 pounds of dandelion honey to a ton of clover, you have improved it immensely in every shape and form; you have given it a rich color, and it improves the taste of it, in my estimation. I have sold that sort of honey in different places here in Toronto, and in the Northern markets, always with satisfaction. If I can get my honey with a little bit of gold tinge to it, that is the best shape to get it in.

Mr. Holtermann—There is a good deal of mustard in the vicinity of Brantford, and I find it a nasty thing to contend with under these circumstances. Where the nights and early mornings are cool, the clover does not yield, but the mustard does yield at that time, and it is in right where the clover is, and in seasons when we have that kind of weather the clover is sure to be spoiled by the mustard. The bees work on the mustard until the atmosphere is warmed up sufficiently for the blossoms of the clover to secrete nectar, and then the bees turn on to the clover. It is sharp tasting and somewhat amber in color, and it certainly does deteriorate the quality of the honey. I never analyzed it as being bitter; that is a new thought to me.

Mr. Byer—I believe it was my honor to be the one who had the argument with Mr. Miller in regard to the question of mustard. Mr. Chrysler suggests that we do not all taste alike. We have fields of mustard all round us every year, and the bees work on every year. Mr. Holtermann says they work on it in the morning. Never with us; it is right in the extreme heat of the day when the thermometer gets up to about 95 degrees. Our honey product is pretty good around here; the bulk of my crop was sold in Toronto this year; it is not as white as we get in the clover sections where they have no mustard, and I noticed a little of that sharpness, but don't think there is any discount on that account. This year I believe I got the highest price that was going in a wholesale way. I regard mustard as being all right; some years it yields when the clover doesn't. I have not noticed anything in the line of bitterness as suggested by Mr. Miller or Mr. Alpaugh. It must be all a question of locality, or else we don't taste alike.

Mr. Dickenson—I am surprised to find we have so much mustard in this Province. I am fortunate in living in a township where we have no mustard at all. It would almost appear from the remarks of the gentlemen that know, that they have the pure stuff, that it is pretty rank. I don't think it would be advisable to blend that with good clover.

Mr. Brown—In our section we try to keep the honey separate as much as possible, and sell it under its proper name—buckwheat, clover or basswood, as the case may be.

Mr. Lowey—I think it is a difference in taste. In my neighbood the bees work on the clover, and on a neighbor's place there mustard, so-called, that the bees work on, and that honey has a sharp taste. I think, like Mr. Holtermann, in a cold, damp season the bees work on it. As to the blending of honeys, circumstances and localities alter cases. I have had people from both West and East at home where I have had beautiful linden and clover honey, and I have had people declare they never tasted or saw anything like it, and I have had these parties write and say, "Whatever your price I want honey like that." I don't think we should let the idea go out, especially among beginners, to blend honey, when we can get the bees to blend it.

Mr. Timbers—That is what Ontario's reputation is built upon—clover and linden honey.

Mr. Pettit—I happened to have the most alsike honey this year I ever had, and ever so many who have sampled that honey have said it was the nicest honey they ever saw, because it was almost pure alsike honey, water-white, and with a peculiarly rich flavor and aroma which you do not get in anything else.

Mr. Holmes—We had better adhere to the old plan and follow it, and keep our honeys separate and distinct, and sell them on their merits. That is the plan we have been following. It is the best plan still unless we can be educated. We are open to conviction. We find instances that come to us as surprises. For instance, the individual who claims that West India molasses is much better and enjoyable than the finest maple syrup. This is, to some of us, perhaps a surprise, and yet we have a lot to learn.

Mr. Storer—I had extracted a yard of very nice honey, and the season was fully half over, and I left the combs on just two days too long because I wasn't there to see to it, and I had to sell that honey at 2 cents a pound less than the other. That is my experience with "blending."

The above discussion is as it appears in the Annual Report of the Bee-Keepers' Association of the Province of Ontario, 1908, published by the Department of Agriculture, Toronto. Only the discussions of the address having a bearing on the points of color, flavor and body, are quoted.

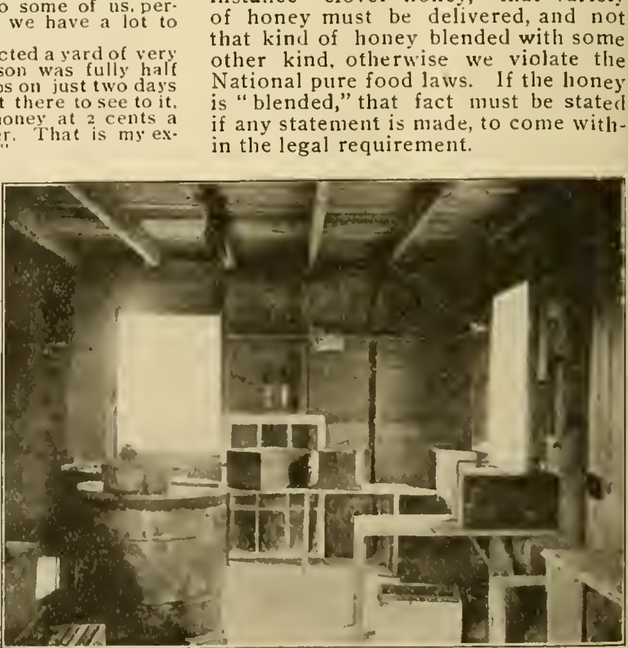
The convention was almost a unit in its approval of the light-colored, delicious-flavored clover and basswood honey without blending; and all who mentioned "body" wanted it thick. Some regretted that mustard was gathered at the same time as clover, and thus unavoidably injured the quality to a greater or less extent. A few thought that intermixture of mustard, such as obtained in a clover flow not detrimental, but none expressed a preference for the mustard intermixture. Those who were so fortunate as to secure crops of clover and basswood unmixed with other honeys spoke in highest terms of the quality. Mr. Alpaugh was the only Canadian speaker who favored blending, and he blends very mildly—only 100 pounds of dandelion honey to 2000 pounds of clover. Although Mr. Alpaugh mentioned obtaining about 2000 pounds of almost pure mustard honey one year, which was "bitter, strong, and sharp," he did not mention that he tried blending that.

The "audible silence" following Mr. Alpaugh's remarks was interrupted by the 9 speakers who followed him, all of whom either endorsed fancy honey unblended, or openly protested against the blending of dark honeys with the light and fancy grade.

The question of the wisdom of blending the dark with light and fancy grades of honey therefore seems to be well settled so far as Ontario is concerned, by a representative declaration of 13 to 1, which looks good to me.

As to blending honey to be sold in the United States, one further point may be mentioned: If we sell honey under the name of some flower, as for instance "clover honey," that variety of honey must be delivered, and not that kind of honey blended with some other kind, otherwise we violate the National pure food laws. If the honey is "blended," that fact must be stated if any statement is made, to come within the legal requirement.

No. 7—Honey-Extractor and Uncapping-Can.



No. 8—Another View of No. 7.

"Improvement of the Honey-Bee"

BY E. S. MILES.

I wonder, Mr. Editor, when, if ever, we will get this much-used-of late title worn out?

There seem to be many and learned reasons *why* the honey-bee *can not* be improved; then, again, some of our learned friends take a hitch in their sails and tacking toward another quarter, go on to show that it has *not* been done, anyway! In short, their statement is about like this:

The honey-bee is "sot" in her ways—you can't "improve" her; you can't improve her much; she won't stay improved after you get her improved; and, finally, you can't improve her suddenly and permanently. And a knowing one here and there adds, "And when she is 'improved' it will be by a scholar who has studied Mendelism, Parthenogenesis, Darwinism, and all the other *isms*, and whose mind is trained to apply 'em to the task in hand."

Now, it ought to be becoming for an ignorant and unlearned man to confess his ignorance before so much learning, so I, for one, am willing to do so. I hereby confess that in my ignorance, when I found a colony of bees better all around than any I'd seen after several years' experience with quite a number of colonies, I knew no more than to suppose that if I'd rear queens from that one I'd get more like it! You see, I'd never even heard of Mendel or *his isms*. My! wasn't I happy? that is, if, as they say, "ignorance is bliss." Yes, those were blissful days.

Well, I reared those queens from that good colony, and as sure as I don't know much, the biggest share of 'em *were* like their parent.

How do I know that? Well, may be I don't, but I was under the impression that they yielded more honey with *less* labor than any other bees I had before or since. Because, for one thing, hardly any of 'em swarmed, and they had a knack of getting strong early, and always being out after any stray "goods" that happened in reach.

I heard a learned man say once that a "man thought he had a non-swarming strain until after a *short season* he found they were not strong enough to swarm!" Whew! such learning rather makes a "pore, ignorant feller" like myself dizzy! A man might keep "bees for honey" a lifetime and not learn that much! You see *I, myself*, was so *ignorant* that I never knew my colonies were too weak to swarm; I thought just because they stored more than others, and sometimes had hard work for all to stay in the hive with 5 or 6 supers on, and line up an inch from the bottom-board, that they *were* tolerably strong. My! wasn't I happy?

Now, I'll never be happy again. I can almost hear, already, the bee-breeder of the (near) future, as he leans back in his luxurious office-chair, shout to his assistant, "John, I've got it figured out to the 32d ancestor according to Galton's law, so, now, go to breeding from old No. 1, and if parthenogenesis doesn't interfere, we'll put our finger on *this* queen (old No. 1), and our thumb on this drone (from No. 2), then, according to Mendel, a large proportion of these queens will produce bees that will yield so and so. Do you hear *me*, John?"

"*Yes, yes*," says John; "*you* bet."

Dunlap, Iowa.

No Time to Read Bee-Papers!

BY J. D. YANCEY.

> "I have not time to read the bee-papers. Bees did fairly well this year."

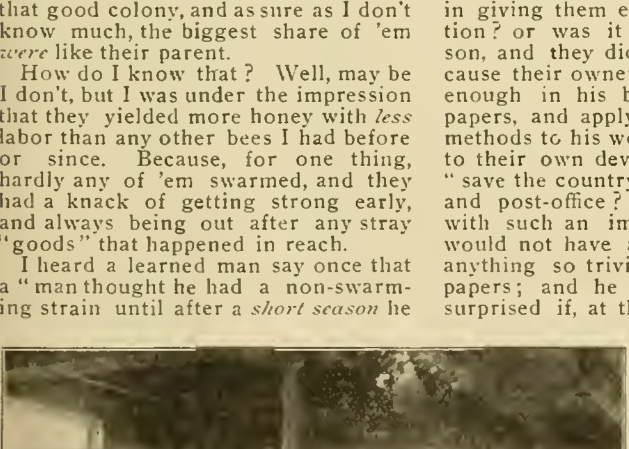
I thought to myself when I read the above, Did the bees do "fairly well" in spite of a poor season, because their keeper had spent the little time it would have taken to read a bee-paper, in giving them extra care and attention? or was it probably a good season, and they did only fairly well because their owner was not interested enough in his business to read the papers, and apply the latest and best methods to his work, but just left them to their own devices, while he helped "save the country" at the corner store and post-office? Of course, any one with such an important job on hand would not have any time to waste on anything so trivial (?) as reading bee-papers; and he is, usually, not much surprised if, at the end of the season, his bees have done only "fairly well." He explains with the popular statement that "there's no money in bees in this part of the country any more," when the chances are, there is just as much "money in bees" as there ever was, if he only had the sense and education to get it out of them.

Mr. Editor, all bee-keepers may be classed under two heads—those who read bee-papers and those who do not; or, those who make a success of their business, and those who fail or do only fairly. This rule may be applied to nearly every line of work that men follow for a livelihood, and is especially noticeable, in this part of the country, in the fruit business. You will find the successful fruit-grower a subscriber to all the leading horticultural publications—not only that, but he finds time to read them, too; in fact, he considers it just as important to keep himself informed as to the latest methods in production, marketing, etc., as the actual field-work. As a result he produces a bumper crop of fancy fruit, for which there is always a big demand at fancy prices. On the other hand, his neighbor who "hasn't time to read" the fruit-papers, plods along the old-time, obsolete way. In a good season his trees do "fairly well," but most years he produces a small crop of inferior stuff that is a drug on the market at any price.

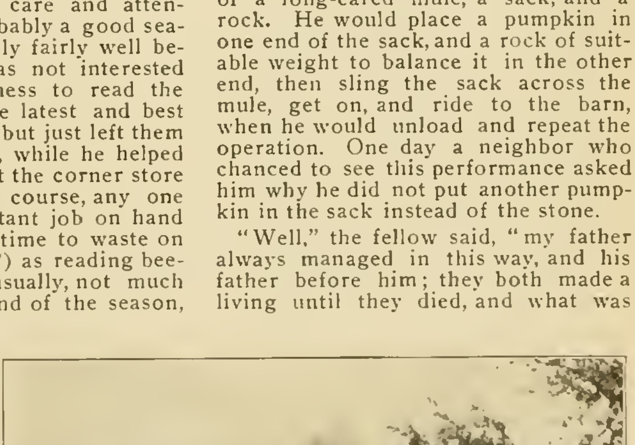
If one remonstrates with such people, they put up an argument just about as sensible as the one given by a fellow that I have often heard my father speak of. He said:

"There was once a young farmer who raised a big field of pumpkins, and was harvesting them with the aid of a long-eared mule, a sack, and a rock. He would place a pumpkin in one end of the sack, and a rock of suitable weight to balance it in the other end, then sling the sack across the mule, get on, and ride to the barn, when he would unload and repeat the operation. One day a neighbor who chanced to see this performance asked him why he did not put another pumpkin in the sack instead of the stone.

"Well," the fellow said, "my father always managed in this way, and his father before him; they both made a living until they died, and what was



No. 9—Honey-Tank for Ripening Honey.



No. 10—Large Bee-Yard and Honey House.

good enough for them is good enough for me."

It is a safe bet that the pumpkin farmer never had time to read the papers!

When I think of the methods practised by many of my acquaintances—farmers, fruit-growers, and (I am sorry to say it) quite a few bee-keepers among the rest—I am forced to the conclusion that they must be descendants of the "pumpkin farmer."

Now, such methods may have been all right in our grandfathers' day, but, my friend, they won't carry you ahead in this day of progress and fierce competition. For all that we hear of the brotherhood of man, this is still the day of "the survival of the fittest." The man who is best equipped for his work—no matter what his line of endeavor—is the one who goes to the top, while the unfit is crowded down and out. And so, my brother bee-keeper, you can not afford not to read the bee-papers, the bee-books, the supply catalogs, and all other publications that may help you to a greater success in your chosen occupation. Others are preparing each year for greater and more intelligent efforts, and in self-defense, if for no other reason, you must do the same.

Now, Mr. Editor, you wish to know in what way reading the bee-papers has helped me. I will say that it has helped me in bee-keeping—in every phase of the business, from the greatest to the least; but the most important point has been the management of out-apiaries.

In the year 1900, my father and I were keeping bees in south Texas. Our colonies had increased by natural swarming to 200, all kept in one yard. On the strength of our success, a neighbor had put in an apiary of about the same number just across the creek, and our surplus, which had been very satisfactory, was cut down until it could hardly be termed a surplus. It did not take us long to decide that we would either have to split up our one yard into several, and locate them at a distance, or else go out of business. Of course, the former plan appealed to me much more than the latter. But how to care for the swarms at the distant yards—that was the question that was keeping me awake at night to answer. The only way I knew of at that time was to be on hand to hive each swarm as it issued. It was very evident that my father or myself could not be at every yard every day, and as none of the locations would support enough bees to justify hiring a man to watch for swarms throughout the long swarming period, we were "stumped," for sure.

Of course, I knew there was no situation so difficult that there wasn't a way out, if one only went about it in the right manner, and—— say? Do I need to tell you that about this time I became very deeply interested in bee-papers, bee-books, and everything that had anything to say about swarm control? You should have seen me trying out the various methods of clipping, shaking, etc. Of course, there were many discouraging failures, but finally I evolved a plan from the many, which suited our conditions to a dot, and then you should have seen the out-apiaries spring up like mushrooms in a night, all over the woods, until we had 8 yards, containing all together nearly 500 colonies. My father went back to the management of the farm work, and I was able to care for the entire lot (except in the rush season of extracting) with greater ease than had both of us the one yard by the old plan. Did it pay me to read the papers? Well, "I should smile!"

When we first went to south Texas, honey was retailing at 40 to 50 cents per gallon, and no demand at that. Again, we had recourse to the experiences of others (through the bee-papers), and by adapting the same to our local needs, we soon had prices on an upward trend. When we left, 10 years later, extracted honey was bringing 8 to 10 cents per pound; bulk comb honey, 10 to 12½ cents; sections, 12 to 18 cents—with an eager demand for all we could produce.

If a person expects to make a perfect success of his business, no matter what, he must keep his enthusiasm and love for that particular line of work at white heat; and I know of no better way of doing this than by keeping in touch with enthusiastic and successful fellow-workers. One can not do this, however, without taking time to do a little reading.

In conclusion, I will say that while I have the management of an 85-acre fruit-orchard, I find time to read 2 magazines on fruit-culture; 2 on bee-culture; one on hunting and trapping; 2 farm papers; all the books I can get on the above subjects; 2 newspapers, and quite a lot of general reading matter. I do not have to neglect my work to do this, as my ranch will show for itself.

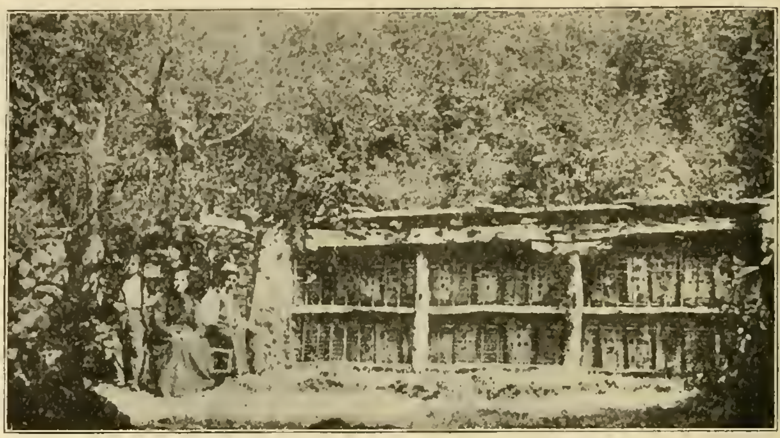
Bridgeport, Wash.

Bears in Italian Apiary, Etc.

BY C. P. DADANT.

America is known all over the world as the country of new things, but it is especially known in Europe for the very things that it is lacking today. Indian wars, buffalo hunts, and new discoveries are easily believed of America, and a bear story would not look out of place to any one. That is why the picture of a bear killed in an apiary owned by W. O. Victor, in southern Texas, in 1906, and published in the American Bee Journal and the French edition of the "Hive and Honey-Bee," did not attract undue attention. Such wild happenings might be still expected of America, in spite of her sky-scrapers and her millionaires.

But we think of Italy as the country of arts, music, statues, paintings, fine monuments. We think of Venice, the Queen of the Adriatic, as one of the centers of civilization. My astonishment was therefore great when I read in l'Apicoltore of January last the information that bears—yes, wild, untamed bears—are still in existence within 75 miles of Venice, in the mountains which separate Italy from Austria. L'Apicoltore contains the picture of an apiary under a shed, fenced with iron gratings to protect it against the depredations of bears. The proprietor, Signor Rigotti, who furnishes the picture, gives an account, of which I will translate the most interesting points.



BEAR-PROOF APIARY OF SIGNOR RIGOTTI, IN TRENTINO, ITALY.

This apiary is located in a lonely valley, 820 meters (2700 feet) above sea-level, where heather blooms from December until April. This locality is called Pezzolo, at the foot of the Brenta hills, in Trentino. For a few years past it has become the home of bears which at intervals destroy entire apiaries.

In one night a bear destroyed 24 strong colonies of bees for the above-named apiarist. In three nights he did away with, or caused to be wasted, some 500 pounds of honey, and the hives, broken to pieces, were worthless for use in the future.

More bees having been purchased, and the apiary recuperated, on another night in June the apiary was again visited by this beast, or some other, and again destroyed. Then the thought occurred to Mr. Rigotti to fence his bee-shed with iron-railings, and to cover the roof with large flat stones. He did so. The bear came again, but was unable to break through the fence. However, he managed to pull away some of the rocks and made a hole in the roof, but was deterred from jumping in, probably from the fear of being entrapped. This ended his efforts, but within a few months a similar accident was reported at another locality in the same neighborhood, where 18 hives of bees were destroyed.

The editor, in commenting upon the recital of this extraordinary occurrence, enquires: Are there no hunters in that vicinity? This should certainly encourage the organizing of a battle to exterminate such unwelcome visitors.

In our own United States bears are becoming rare curiosities since Uncle Sam has found it advisable to protect and feed the wild bears of the Yellowstone National Park. But even in that region, it seems to me that it will be necessary to limit their production, for they will soon be a menace to other preserved game.

The Steam-Heated Honey-Knife.

The same number of L'Apicoltore—which is a magazine well-known for the judicious selections it makes of international information—gives a quotation from J. E. Crane, in Gleanings in Bee Culture, regarding the steam-heated honey-knife which is mentioned as one of the greatest improvements of the year 1910. L'Apicoltore calls attention to the fact that two Italian inventions—the one of the solar wax-extractor by Leandri, the other of the steam honey-knife by Tonelli—have been taken by foreigners without mentioning the names of the inventors, but, on the contrary, by changing the names to some of their own people. There is some truth in this, and people are too prone to take up other persons' ideas without credit being given.

Regarding the solar wax-extractor, however, when I mentioned it as an Italian invention, years ago, at a meeting of the National Bee-Keepers' Association, Mr. O. O. Poppleton was very much displeased, as he asserted to me, then and there, that he had discovered this, years before, without any suggestions from any one else, and that he claimed it as his own discovery.

A similar coincidence of invention took place with the Vandervort spur for pressing wires into comb foundation. This was the "eperon Woiblet" invented in Switzerland at the same time, and I yet remember the remarks made by Mr. Bertrand as to the exactness with which the thoughts of brainy inventors many miles apart could meet on a given subject.

Regarding the invention of the steam-heated knife, Mr. Tonelli was kind enough to send me, at great expense to him, two of these knives, in 1906. I gave the American Bee Journal a cut of these, and the invention was noticed, giving the name of the inventor in the Dec. 27th number, page 1046. That same year the Tonelli knife, so courteously furnished to me by its inventor, was prepaid by him, and I might here add that our express companies in this instance earned the apellation commonly given them of "organized swindles," by charging exorbitant tolls for an article which had come as far as New York by cheap Italian parcels post.

The Tonelli knife was good, but the steam-heating apparatus attached to it was hardly adequate, and we could not succeed in heating the knife to its point. The electric knife was not practical in apiaries, as there is no electric current to be had in our country places, up to the present time.

The new steam-heated honey-knife, which is praised by Mr. Crane, Mr. France and some others, is evidently copied from the Tonelli knife, but it has some advantages over it. The water-reservoir for the production of steam is of greater capacity. It may be placed outside of the building with a hose long enough to reach through the wall. In this way the operator does not suffer from the heat produced. In addition to these differences, the new Tonelli-American knife has its connection with the steam hose at the heel of the blade, thus leaving the handle cool at all times. The original Tonelli knife has a hollow handle, and the steam passes through it. A large amount of steam would make it too hot for comfort.

Since every country in the world contributes to progress, and since the discoveries of one country are promptly noticed in other countries, new inventions are likely to be copied and improved upon. But I hope and trust that our bee-people will give honor to whom honor is due, for nothing is more unpleasant for an inventor than to be ignored when his invention is copied in any of its parts. Neither is it pleasant for any one to be accused of rapacity or plagiarism.

Hamilton, Ill.

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The Future of Michigan's Bee-Keeping

Read at the Michigan Bee-Keepers' Convention,

BY E. D. TOWNSEND.

There is no way to judge of the future only as we compare it with the past. In writing of the future of Michigan's bee-keeping, I do not think I can do better than touch some of the "high spots" of my 36 years of bee-keeping in this State.

In 1876, when I began bee-keeping in Clinton county, much of hat part of the State was a virgin forest. Most of the lower counties of th State were then being converted into farms. In the majority of cases small clearings were made, and as fast as the timber was removed wild white clover came in in profusion. At this stage, as is the case in clearing up new land, many waste-places, such as around stumps and the like, furnished ample opportunity for the wild white clover to abound. At the present time, on account of more intense farming, not nearly so much white clover is produced as of yore.

At this early period, in many locations in Michigan, thousands of acres of basswood timber abounded, and the conditions seemed to be ideal for the secretion of nectar. Especially white clover could be depended upon to yield nearly every year, so a surplus could be taken from the bees. Then some seasons (we looked for it to yield every other year) basswood would yield wonderfully. These two sources taken together were hard to beat, either from the standpoint of quantity or quality.

Basswood was always a fickle yielder. Some seasons it yielded very abundantly, but in many others very sparingly, or none at all. With the advance of time basswood has almost entirely disappeared from most locations in Michigan, so it can not be considered as a honey-yielder, except in a very few locations.

Generally speaking, white clover is not so very abundant in this State at the present time, but we have in alsike a much better source of honey than white clover, and alsike clover is the future dependence of Michigan for its honey supply. Michigan clover honey is the finest in the world. It is white enough for table use; the fact is, there are few honeys that are whiter. Clover honey has an aroma and flavor unsurpassed by any other honey on earth.

I repeat, it is the alsike clover we as honey-producers in most locations in Michigan will have to depend upon for our honey-resources in the future. One who is located in a good alsike clover region, preferably where a considerable quantity is left for seed, has the best location the State affords. Such a location is likely as good as any one has in any State. It might not be out of place for me to say that Saginaw is in the center of the best clover location in the State.

In the north part of the State the raspberry and willowherb district is changeable. The bad fires of the past few dry seasons have played havoc with a considerable portion of this once famous location. The rough and hilly portion of the raspberry district seems to be hit the hardest by fire. As a considerable portion of this region is of this character, it will be seen that many once good locations are very poor now, and the most of these hills are mere sand-dunes, nothing in particular growing upon them at the present time. Still, there are many good raspberry locations that may produce for a good many years to come. I hope and believe this will be so.

I predict that the future honey of Michigan will be mostly gathered from alsike clover. It produces well upon very heavy clay, also about as well upon sandy loam; the latter should be of rather fertile soil for the seed to "catch."

We will suppose that you are located in some place that for some reason or other you do not think is as good as it might be, or perhaps as it was once; can't you think of some location, perhaps not more than 5 or 6 miles from home, that may be a good one? The out-yard will solve your proposition for you. We produce and recommend the production of extracted honey for out-yard work, although comb honey can be produced in out-yards without any attendant to hive swarms, as we proved with two years' trial.

During the last few rather poor seasons we have proven to our own satisfaction that there is more money in the production of extracted honey than in comb, with less labor. I would produce extracted honey in out-yards. Try to make it a point to locate your out-yards not so far from home, so you can drive to them and do the work, and back home that night. A yard location like this can be worked to much better advantage, and at much less expense than one further away where one has to stay over night on expense.

There are some locations not as good as they used to be, and others that were never very good. The plan to work in the future is, scatter your bees out in lots not so large but that a fairly good surplus can be secured in an ordinary season. It is rather hard to tell by the looks of a location about how many bees it will support, but, as a usual thing, there are plenty of unoccupied locations so one will not have to put a large number of colonies in one location until he has tested that particular yard for honey. Later, if it is decided that the location will support more bees with profit, add them, as the more bees one can keep to the yard the cheaper he can produce honey.

The disease proposition is another factor we have to contend with in this State. This is not likely to be so much of a problem with the members of this Association, as they are posted and know how to combat the disease. Those who do not read and attend conventions, and keep abreast of the times, will "fall by the wayside." Disease will clean out the shiftless fellow—the fellow who produces the poor, crooked, travel-stained kind of comb honey that sells for such a low price that good goods can not compete, leaving the market for the up-to-date fellow with good prices for a good article. There is a little "silver lining" to even as bad a thing as the dreaded disease, foul brood.

In conclusion, to the best of my judgment the future of Michigan bee-keeping is not quite as bright as it was a few years ago, when the country was in a newer stage and less disease was prevalent. Still, with proper management and good judgment, bee-keeping is still about as good an occupation as most rural pursuits.

Remus, Mich.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Promoting Interest in Bee-Keeping

I am to read a paper next Tuesday evening (March 12) before the Magazine Club, on "Pleasure and Profit in Bee-Keeping," and we will have one or two songs by four young ladies to complete the program. The roll-call will be responded to with quotations about birds, bees and flowers, and, at the close, small biscuit and a little square of comb honey covered with whipped cream will be served. How is that to promote interest in bee-keeping?

Excelsior, Minn. MRS. W. S. WINGATE.

"That" is certainly a fine way to promote the interest of bee-keeping. If there could be more advertising in the same way it would undoubtedly help the sale of honey, let more people know just how delicious it is, and interest many in our chosen pursuit.

Whipped cream with honey is something new; sounds good, too.

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Salt and Vinegar in Winter Bee-Food

I noticed in the American Bee Journal for January that salt and vinegar should be added to the syrup for winter feed for bees. I would like to know what proportions.

Hamilton, Va. MISS L. A. HOLMES.

According to the "British Bee-Keepers' Guide Book," for spring and summer feeding, one ounce of vinegar and one ounce of salt to 10 pounds of sugar. For fall feeding use one ounce of vinegar and ½ ounce of salt to 10 pounds of sugar.

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Bee-Report for Several Years

My bees did not do well for the past 3 years, on account of the severe drouth we have had. I am hoping 1912 will be a good season, as we have had plenty of rain which promises success to the farmer. Now, for my report.

In 1908 my bees did real well. I sold over $500 worth of honey at 11½ cents per pound, and up to 20 cents. In 1909 the bees did very poorly, only gathering 500 pounds, which I sold at 12½ cents per pound. In 1910 they did poorly, gathering only 500 pounds of honey, for which I got 12½ cents per pound. In 1911 they did poorly, again gathering 500 pounds, for which I got 15 cents per pound I could not expect any more, as the farmers failed also, and that more than paid for feed, as each winter they went into winter quarters in fairly good condition with the exception of 1911, when they went into winter quarters with plenty of stores. I haven't had to feed any yet. I just looked through my colonies and find them in better condition than I have had them at this time of the year for many years. I find no disease among them.

During those 3 years I lost several colonies with foul brood, which I think I am rid of now. I have united several colonies, and now I have 45, all in good, healthy condition, and hope to get good returns this year.

MRS. CARRIE BRANCH.

Ennis, Tex., Feb. 27.

You do not say how many colonies you had, but you say you have 45 now. If we take that as the number you have had during the 4 years, that would give you $3.88 per colony. That surely is not bad, taking into account 3 years of severe drouth, and your number may possibly have been less, giving you a still larger average per colony.

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Health and Profit in Bee-Keeping

Periodicals galore are published for the farmer, but not every farmer's wife knows that there is an interesting monthly published for her with the expressive title, The Farmer's Wife. It is now in its 14th year, and is published at St. Paul, Minn. The Farmer, an agricultural publication, is justly proud of having been the means of first starting beeward a woman who has made a real success as a bee-keeper. Mrs. W. S. Wingate, of Minnesota, is the woman, and her story is given in The Farmer's Wife, preceded by an editorial note which says in part:

To know her personally would be to convince one that she would work with method and faith to a resultful finish. A woman of warm hearted cordiality, her home, her church, and her neighborhood feel her influence. Her husband is a business man in a near-by city, and is in entire sympathy with her in the matter of working out her own problems from a woman's standpoint. They are also in hearty sympathy with each other in all social work, both being active workers in the church and in the temperance cause.

With two daughters married with whom her motherly interests keep in close touch, a son and two young daughters at home, and two small motherless boys whom she has taken into her home to care for, she is a busy woman.

Finding herself a nervous wreck scarcely a dozen years ago, and striking out into this work which brought her strength and its accompaniment—happiness—she says one desire of her heart is to "preach from the housetops" what a blessing the outdoor work of bees is, and if by this "preaching" she can help even one overworked sister to more outdoor life and better health, then she will feel that her life has availed much.

Here is Mrs. Wingate's story as told by herself:

Eleven years ago, while living in a suburb of Minneapolis, my interest in bee-keeping was aroused by a series of articles published in The Farmer. It appealed strongly to me as an outdoor recreation which would be a pleasant change from poultry-raising, and so I sent for a copy of "A B C of Bee Culture," and also subscribed for Gleanings in Bee Culture. Every spare moment was spent in studying these, but I finally realized that I must have the bees themselves.

In April I invested a birthday present of $10 in a colony of pure-bred Italian bees, veil and smoker, and an extra hive. On their arrival the bees were placed at some distance from the house, and for a month they were left to their own devices, as I was afraid to go near them. In the meantime I talked bees with every one I knew who had ever kept any, gained much information, and at last mustered up courage to examine my own and put on a comb-honey super.

That season the white clover was a failure, and being out of reach of the basswood I did not have a pound of surplus honey. In July a strong swarm issued and was successfully hived. I then had 2 colonies with ample stores to winter in our cellar. The next spring the fever ran higher than before, and I eagerly embraced an opportunity to exchange a pair of fancy geese and an incubator for 4 colonies of hybrids.

I felt well repaid for both time and money invested, when, in July, I could treat both the family and friends to cakes of beautiful snow-white clover honey. The following season I bought an extractor and ran one colony for extracted honey, and a later crop of 2000 pounds did not look as large to me as that one super of 60 pounds.

In the meantime my interest and experience increased, and I occasionally bought a few colonies when a good opportunity offered I soon found that customers were waiting for all the honey I could produce.

When the sun went down on Aug. 1, 1904, our family of 7 was standing around the burning ruins of our pleasant home with practically nothing left but our courage and the bees. It was deemed wise to move into the city, where we located in a new home on 3 lots. For several years I kept 35 colonies there, and it proved to be a good location, as white clover and basswood were within easy flight of the bees.

Three years ago it was necessary to make another move, and as I felt that I could not give up my bees, we located in our present home, an hour's trolley ride from Minneapolis. Located on the shore of a small lake; our 5 acres give ample room for all the bees I can care for, while our garden, orchard, berries, a flock of pure-bred Rhode Island Reds, and a good cow furnish a meal that our friends may well envy.

About the first of April the bees are removed from the cellar, the hives well protected with tar-paper, and unless feeding is necessary, they are not disturbed until fruit-bloom. During that time every colony is examined, and the queens' wings clipped if it has not been done the previous year. This one act of clipping the queens' wings greatly simplifies the hiving of swarms, and is the only way in which a woman can really manage without a man's help during the swarming season. June 1st, or when the white clover first appears, supers having previously been filled either with sections for comb honey or empty extracting combs for extracted honey, are placed on the hives.

About this time the real fun of bee keeping begins, for now it is swarming-time, and not for one moment must one lose sight of the bees. Veil, smoker, and an extra hive are kept in readiness to use at a moment's notice, and the two little boys are bribed to watch for the swarms which may come out at any time from 7 a.m. to 6 p. m. Beginning with willows and dandelions, and followed by fruit-bloom, clover, and raspberry we come to our main honey-flow in this vicinity—basswood—which comes early in July and lasts about 10 days, occasionally followed by alfalfa if the weather is hot and dry. This year we had a very heavy flow of fall honey from boneset, asters and goldenrod. An unusual occurrence was that of almost continual swarming during August.

As soon as the basswood is over the supers are removed and all capped honey taken care of, while the uncapped is put back to be finished up with the fall honey. Comb-honey sections are scraped, graded, and neatly packed either in 12-pound cases or in single paper cartons. The highest grade sells readily at 25 cents per section, and the others according to the quality.

The extracted honey is put up in pails holding 10 pounds, labeled, and sells for $1.50 per pail. Customers, who year after year order 5 or 6 pails upon receipt of a postal card notifying them that the honey is ready, are plenty, and I have never yet been able to supply the demand for what they know is a strictly pure article.

The cappings are melted into beeswax, for which we have a standing order at from 5 to 7 cents above the price paid by the supply-dealers. A most delicious honey-vinegar is made from the washings of the cappings, and is unexcelled for salad and table use. A cough medicine made of extracted honey, flaxseed, and lemon-juice is pronounced by physicians to be superior to anything we can buy.

Up to this time the bees have been wintered in the fruit-cellar under the kitchen, and last winter the 70 colonies wintered there came out in good condition. With the large increase this fall, it was thought best to build a bee-cellar, and so one was built in a clay bank at a cost of $130, and in it are over 120 colonies, only waiting for the first breath of spring to call both bees and owner to a happy summer. Two years ago a good honey-house was built in which the extracting is done, supplies are stored, and hives made. The latter are bought in the flat and made up and painted in the early spring so that all may be in readiness when needed.

My experience has proved that there is far more profit with less work in bee-keeping than in poultry-raising, although the two make a good combination, especially in connection with fruit-growing. For the tired, over-worked house-wife who needs the rest for body and mind, nothing equals a colony or two of bees, whose care calls forth into the sunshine and fresh air where God meant his children to live and breathe. Not only will it give an abundant supply of delicious honey for the table and an extra cake for a neighbor, but when Christmas comes it is convenient to have the "honey-money" for an "extra."

Believing in co-operation in the home as well as in business, I have given to each daughter and our one son a colony of bees, from which they have the honey and increase, and in return they give freely of their help when I need it during the swarming or extracting season. One valuable thing about the bee and honey business is that all—even the youngest—may help in making up supplies, and in preparing the honey for market, and in that way gain an interest in the bees themselves. Not only is there good demand for all the honey I can produce, but I can also sell from $100 to $200 worth of bees during each season.

Nothing could induce me to give up bee-keeping for, aside from the profit, the larger returns of health and happiness, the pure joy of living in the sunshine and watching the tireless workers as they come in with loads of pollen and nectar outweigh any financial consideration.

To sum it all up, bee-keeping is pre-eminently a "woman's job," whether for pleasure or profit, or for a combination of both. The financial returns compare favorably with anything else from farm or garden, while to those who love outdoor life bee-keeping is the most fascinating of all avocations. In watching a colony of bees at work the lines of an old, familiar hymn are brought most forcibly to mind:

"God moves in a mysterious way
His wonders to perform."

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Swarms and Frames of Old Honey

Mr. Wilder:—I have on hand enough brood-frames entirely filled with old honey to give each new swarm for this season about 4 frames. I can not market this profitably at my local market, and my idea is to give each swarm two full frames of honey next to each wall, and use 6 full sheets of foundation in the center for brood-rearing. My idea is that this would leave sufficient room for brood in the 4 frames filled with foundation, and that I would get the benefit of the old honey because it would enable them to go right into the second super with the new crop.

I would appreciate very much any suggestion that you may make.

Nashville, Ga. W. E. Morris, Jr.

I don't like the idea of using full combs of honey only where they are actually needed, for they are space killers when they are placed where they are not needed. Especially is this true in the spring of the year when our queens need all the room possible to keep up bee-production, and a solid frame of honey on either side of the brood-nest would most likely do more harm than good. It might be said that the queen will not occupy these outside combs but little any way, and the bees will naturally fill them with honey. I will admit that this is true, and will say that right here is where most of the comb-honey producers make a mistake. They should keep these outside combs extracted and insert them in the middle of the brood-nest. This will keep brood-rearing at the highest possible pitch, and best results will be obtained.

The best way I see to dispose of these heavy combs of honey would be to give them, as you suggest, but give them to the small swarms or the last swarms hived. They won't have time, perhaps, to build all the combs and store enough honey to tide them on, and they will need these combs of honey, and will serve the best purpose here.

Transferring Bees

Dear Mr. Wilder:—I have 4 colonies of bees in old box-hives, and I want to transfer them into modern ones. When would you do this? How would you drive them out of the box-hives?

I don't fully understand what the division-board is used for.

Would you advise using 8 or 10 frame hives? Would you stock with better queens now, or later in the season?

Lawrenceville, Ga. R. A. Dunagan.

Now (March 18) or within 30 days will be a good time to transfer bees. I would smoke the bees well in the old box-hive, and place it on the ground on its side about 2 feet from its stand, and place the new hive on the old stand with entrance turned in the same direction the old one was, so the returning bees can find it easily. Then with ax or hatchet split the old hive open, and with the hands spread it out on the ground, and you will have easy access to all the comb as well as the bees, and as the comb is removed the bees can be brushed in front of the new hive and will march in. Two or 3 pieces of the best brood should be fit in the frames of the new hives and set back in it to serve as a starter for them in the new quarters.

The honey can be marketed, or left out for the bees to carry back into their new hive, and the combs rendered into wax.

If you will rob the old box-hives close, a day or so before transferring, you will not have a messy job transferring. The division-board is used only on the outside of the frames, and should be wedged up against them, whether a part or all the frames are in the hive. Then when it is removed the frames can be easily removed and the colony of bees examined at any time.

For the average location the 8-frame hive is large enough, but in localities where the honey-flow is heavy, and of short duration, the 10-frame hive might be best in the production of section-comb honey, or extracted honey; but for chunk honey the 8-frame body and a super of shallow extracting combs is the best, and the storing room added as it is needed.

I find it best to look after my stock and introduce queens later in the season, when queens are cheaper and more easily obtained.

Packing Bulk-Comb Honey

Mr. J. J. Wilder:—I notice that you are an extensive producer of bulk-comb honey, and I want to ask you how you pack it for the local trade, and what style and size packages you use. S. A. Hall.

Lisbon, Fla.

If the honey is light in color I pack it in pint and quart Mason fruit-jars, which are easily obtained at almost any grocery store, and at very reasonable prices. The Mason fruit-jars are common utensils for holding liquids, in every household, and to obtain the jars for future use with the honey, is no small inducement to the purchaser.

The comb honey is prepared by cutting it in strips as long as the jars are deep, and about 1 or 1¼ inches wide, which are then placed in the jars carefully endwise, then enough extracted honey poured over the comb to fill the jars. This makes a very attractive package when the honey is very fancy.

Dark honey I put up in the same manner, using 2 and 3 pound large-mouth friction-top cans, and 5, 10 and 20 pound large-mouth pails.

Bee-Keeping as a Business

Mr. Wilder:—I know you must be a busy man, but may be you can answer a few questions which will help me so much, and I will greatly appreciate it.

I have been a poultryman for 7 years, and during the last few years I have kept a few bees also, and find that bee-keeping pays me much better than poultry, and I am going to "keep more bees." I thought when I started bee-keeping that I would not like it much, but the longer I keep bees the better I like it. It is indeed very interesting, and,

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Mr. Wilder, from what I know of it, it is a very good business; but as you have had years of experience, I want your opinion of it as a business.

How many pounds of surplus honey will a colony of bees store in a season if they are properly cared for? About how many colonies should be kept in one location?

Mr. Wilder, I know if any one can give me the above information you can, and what you say about it will be true.

Buntyn, Tenn. CHARLES WESLEY.

My opinion of bee-keeping as a business for an energetic man is all such a man could expect. When bee-keeping as a business is not satisfactory, the man is usually more at fault than the business. To us who are going at it in a business way, giving it our best energy and thought, it is indeed a lovely and pleasant pursuit, and we like it better and better as the seasons come and go, and there is no reason why others should not find it the same.

As to the amount of surplus, this is a question of season and location, and every bee-keeper will have to solve the question for himself, by keeping a record of the amount of surplus honey obtained, for two or more seasons. But if I were called on to make a rough guess from what I know of the question from correspondence and experience I would say, one super from each normal colony in the spring, and another during the summer and fall flows, or about 50 or 60 pounds. For the average locations, from 40 to 60 colonies are enough bees to stock it.

A Successful Bee-Business

MR. WILDER:—I am making a success at bee-keeping. My bees are all in good condition, and the past season was a good one, as well as the previous seasons. My success from the start has been largely due to your advice and correct methods, for which I am grateful to you. W. H. HENDERSON.

Greenville, Fla.

I believe any one who has the ability and will take up and carefully carry out the methods of any successful bee-keeper, will succeed at bee-keeping. But, alas! Only every now and then one will do it. No wonder we have failures, and will have right on, so long as successful men's methods are ignored. But if they were studied and put in force, we would not lose another member from our ranks, and our industry would soon be what it ought to be, and should be.

When I have studied out another bee-keeper's methods who has been successful, it's all plain to me how he has succeeded; and when another man has carefully carried out my methods, I can't see how he can fail. He's bound to succeed. But only a few will do it, and others never will, so there is no use to grieve when one "faints by the way." Let's be encouraged so long as a few will follow us up in our methods, and continue to bring them plainly before others.

Having Troubles With Swarming

DEAR MR. WILDER:—It is swarming time with my bees here now, and I am having no end of trouble by swarms issuing and entering other hives and getting killed. How can I prevent this great loss and get my bees to enter the supers and store honey there? Your advice will be greatly appreciated.

Rock Hill, S. C. J. E. COMER.

There probably are no suitable trees near your apiary for the bees to settle on. If you haven't any trees or bushes near your bees, swing up burnt chunks of wood or sticks several feet from the ground, and they will surely settle on them, and all you will have to do to hive them will be to untie the cord holding the burnt knot or chunk, and carry it to the prepared hive, and shake the bees off into it.

Or, you might place something over the entrances of other hives when a swarm issues, for a few minutes, until they settle on some object, then remove whatever is laid or spread over the entrances, and you will overcome this trouble.

You should always keep over from the previous season a few sections in which the bees have partly built the comb, and these should be inserted about the middle of the newly prepared supers, and the bees will enter them if they are in a condition to do so.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Texas Bee-Keeping and the Census

The 1910 census does not seem fair in its figures concerning Texas bee-keeping. Although we knew, and predicted before hand, that Texas would not make a very good showing in the 1910 census, on account of the unfavorableness of the last two years, we expected a better report.

The census figures show a decrease of 39 percent from 1900 to 1910 in the number of colonies—greater than any other State—while we have believed, and believe yet, that there has been a considerable increase during the last 10 years. We believe that there are more bees kept in Texas at the present time than 10 years ago, although the figures do not show it. We know of large numbers of colonies personally that were not enumerated in the census report aside from our own large number. We are sure many others can say the same.

The trouble lies with the census enumerations, including only the bees kept on farms and not those kept by the extensive bee-keepers, who, for the most part, reside in the cities and towns, and operate their out-apiaries. If such is the case, it can be seen at a glimpse that Texas does not show up fairly on this account. And that is undoubtedly true.

That there is a decrease in farms reporting bees kept on them together with a decrease in the number of colonies kept, is due mainly to the two dry seasons following each other, of which the census year was the worst of the two. Since the 1910 honey season was far below the average, which affects the farmer bee-keeper much more than the experienced extensive bee-keeper who knows how to care for his bees during an off year, the reports must necessarily be very unfavorable.

The census figures do not do justice to the State of Texas, in our opinion, at least we believe there are more than 238,107 colonies of bees kept in this State. A great number of colonies were not enumerated because they were not reported by the bee-keepers who live in the towns and cities. As there are a large number of such bee-keepers in Texas who own many apiaries, the number of colonies reported would necessarily be greater if enumerated.

In spite of the above Texas can still be proud of the distinction of having the largest number of colonies of bees even under the 1910 census. With a fair enumeration its number of colonies would be larger, especially if taken during a more favorable year than that of 1910. We are now already anxious to know what the next census will show.

Bees and Poultry

Although we believe absolutely in "specialism" in bee-keeping as well as in other lines of work and industry, and practise this in our own bee-keeping, we have mixed poultry-raising with it to a considerable extent. We began many years ago keeping only a small flock of pure-bred fowls with the only end in view of producing eggs and chickens for our own table. Since our pure-bred poultry attracted attention, and others desired such stock, we soon found ourselves engaged in producing hatching eggs to fill orders for sittings. This proved remunerative, and increased our already possessed national love for pure-bred poultry. The result was that we improved our flock from year to year, and also enlarged upon the number kept, caused by the increasing demand for eggs and young stock.

Of late years we have added room to our quarters, and also added several other varieties of poultry, due to the demand for stock and eggs of the various kinds added. By being able to supply just what was wanted, according to the different views and ideas of many people, just that many more "shekels" could be added to the poultry-business income. And now we have come to a point where it is necessary to enlarge further, and a 25-acre poultry farm 2 miles west of our city residence is the outcome. This is looked after by a special assistant, who will help us to produce eggs and young stock by the hundreds instead of dozens, as we used to do.

But why do we mention all this about the poultry business, which has nothing pertaining to bee-keeping in it? There is a reason. We have found out as we went along gradually, that there was money in poultry properly kept, and by keeping the right kind of stock. We found, further, that poultry-raising can be combined so well with bee-keeping that it is a wonder so few bee-keepers are combining it with the profession. As practically all of the work with the poultry can be done early in the morning, before the bee-work begins, and later in the evening when the work with the bees is ended, the two harmonize nicely.

We related our poultry experience step by step to show that it can be followed either on the smallest scale or very extensively, according to the situation or the ability of the bee-keeper to take care of the two lines of work. This depends much upon the time that may be spent in this direction without interfering with the bees, as neglect of the main bread-bringing business should not be tolerated.

At this point the argument to keep more bees and devote your entire time to them instead of mixing in the chickens, would be a good one. And the writer is a strong advocate of not only keeping more bees, but "keeping more better bees better." However, it must be borne in mind that not every bee-keeper is so situated that more bees can be kept, or more apiaries established. Of course, these may adopt the motto in part, and "keep better bees better," but beyond this it is impossible for them to go.

It is in such instances that poultry will mix well with "better bees kept better," and poultry can be added without being required to look for more and new pasturage as becomes necessary if more bees are added. Thus the bee-keeper who can not spread out more in bee-keeping can add to his income with poultry.

But there is another side to this subject of combining bees with poultry, and that is keeping poultry as a "hobby," to take one's mind from extensive business. The fact that poultry combines so well with bee-keeping is but one of the strongest reasons why it should be chosen as a "hobby" to "ride" for a change when a change from business cares is needed. And since it is one hobby that can be made to pay at the same time, as it affords recreation and pleasure to the "rider," the reason for adopting it is only strengthened.

From our own experience we have learned to love and enjoy our "hobby" —our poultry—and although we are "keeping more better bees better" in extending our apiaries from year to year, we find time for our poultry business as well. The change from one to the other does us good.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Drones in Woker-Cells, and Vice Versa

We bee-keepers sometimes get together and talk about bees. Some funny questions arise. Some one asked if we could transfer a worker-larva under 3 days, placing it in a drone-cell, and rear a drone; or a drone-egg in a worker-cell and get a worker-bee. I said I never tried, but would inquire of you. IOWA.

ANSWER.—The matter is very easily tried by any one. I have never transferred a worker-larva into a drone-cell, nor a drone-larva into a worker-cell, but with hundeds of others I have often transferred larvæ from worker-cells into queen-cells. They have invariably turned out queens, and if I should transfer a larva from a queen-cell into a worker-cell, I should confidently expect it to turn out a worker. That looks as if the kind of cell determines the kind of bee, doesn't it? But to argue from that that a worker-larva put into a drone-cell would produce a drone, or *vice versa*, would be carrying the argument too far. There are two kinds of eggs laid by the queen—fertilized, or female, and unfertilized, or male. The female egg may produce a queen or a worker. It is a matter of development, the kind of food deciding the development, and the kind of cell in which a larva is found seems to decide how the larva shall be fed. But to change the sex is another matter, and the bees have no power to produce such a change.

I said I had never tried changing a larva of one sex into a cell belonging to the other sex. But I have known of many cases in which, without any interference on my part, male eggs were placed in male cells. The likelihood is that you have known of them, too, when you come to think of it. In the case of laying workers or played-out queens, I have known of thousands of male eggs being placed in worker-cells. I have known such eggs also to be placed in queen-cells. In either case only drones resulted.

Where a drone-egg is put in a queen-cell, it is reasonable to believe that the bees are very anxious to have it turned out a queen, and would use every effort in their power to have it so turn out. But it is beyond their power to change the sex. On the other hand, I have known a good many female eggs to be placed in drone-cells. It happens perhaps oftener than you would think, that when a prosperous colony with a vigorous queen has a bit of drone-comb in its brood-nest at a time when drones are desired, the bees contract the mouth of each drone-cell, the queen lays a worker-egg in it, and there results a worker reared in a drone-cell.

So you see that a female egg produces only a female, either a worker or a queen, and a male egg produces only a drone, and no changing from one cell to another can change the sex.

Using Combs Where Bees Died—Getting Increase—Building Up Weak Colonies—Feeding Combs of Granulated Honey

1. Last autumn I had a colony of bees suffering from bee-paralysis. They were in an odd-sized hive, and I wished to transfer them to a Langstroth hive. An old bee-keeper advised me to fill the Langstroth hive with combs, shake the bees from the old hive into this, place a queen-excluder over it, and put the old hive full of stores on top, and the bees would carry the honey down into the new hive and it would cure the disease. Shortly after this I was called away from home for some time, and on my return I found that the bees had carried none of the stores down, but had starved to death in the lower hive. There are many dead bees in the cells of these combs. Will it be safe to use these combs this spring, and, if so, will the bees clean the combs from the dead bees, or should I take them out of the cells before giving them to the bees?

2. What is the easiest and quickest method of increasing the number of my colonies?

3. How can weak colonies be built up quickly in the spring?

4. Can combs containing granulated honey be fed to the bees in the spring? If not, what can I do with them?

IDAHO.

ANSWER.—1. I think it will be safe to use the combs. The bees will clean out the dead bees. But you may be able to help them. Let the combs be left for a few days where it is dry and warm, so the dead bees will dry and shrink; then if you hold the comb flatwise you may be able to shake some of the dead bees from the underside.

2. I don't know. Quite possibly it may be by natural swarming. Possibly it may be by one of the plans of artificial increase. If I knew all about your experience, ability, and locality, I might suggest which one. But I don't know that. If you will study up all that is given in the bee-books you may be better able than any one else to make the decision. The book "Fifty Years among the Bees" is probably fuller than any other book on the subject of artificial increase.

3. By giving them sealed brood or young bees from stronger colonies. But judgment must be used, or you will do more harm than good. Very early, when no colony has more than 3 or 4 frames of brood, if you take from one with 4 frames of brood to give to one with only 1 frame of brood, you will do more harm to the stronger than good to the weaker. Wait till the stronger has frames of 5 brood or more, and then it will stand to have one of its brood taken away. Be careful, however, not to give the weakling more brood than its bees can cover. One way is to take from the weakling a frame mostly filled with eggs and unsealed brood, and exchange it for the ripest sealed brood you can find in the strong colony.

4. You can give them to the bees, but unless some precaution is taken they will throw out the granules and waste them. Sprinkle them with water, then give them to the bees, and as often as they lick them up dry sprinkle them again.

Delicious But Deceptive Honey

I am a bee-keeper of several years' experience. While I and my customers are very fond of our best and most delicious honey, yet there is an irreconcilable hostility on the part of this high grade and delicious honey against my health and my customers' health, even though eaten in very small quantities. It invariably weakens the internal organs of urination so much, that I am contemplating the idea of abandoning the bee-business owing to this honey. I wonder what advice you could give me, or what could be the matter with the honey that is so delicious, yet so deceptive? I

thought I might possibly learn something from Dr. Miller's "Honey as a Health Food" that might explain the matter.
CALIFORNIA

ANSWERS.—The first thought is that there must be some mistake, and that the honey is blamed for a trouble that is due to something else. But if a number of you have found the trouble arising every time you eat the honey, and only then, it is possible the honey is at fault. You do not say what kind of honey it is, and it is possible that you do not know, for it isn't always easy to know the source of honey. Very likely, however, I couldn't tell any more about it if I knew from what flowers it was gathered. I'll tell you what you do. Send a sample of the honey to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C., and he may be able to tell you something about it. It will cost you nothing

Some Queen Questions

At what age will a young queen begin to lay eggs? Some one told me that she will first lay eggs when she is 2 or 3 months old. Is he right?

2. Will a queen's wings grow again after they are clipped? I suspect that turkeys' wings can grow again the same as queens'. Bee-books do not say queens' wings would grow again.

4. If queens' wings were clipped would swarming be heard? I would not be absent from the apiary.

5. Can a young queen be kept in a small cage in a room of the house for 3 or 4 weeks with sweets, before giving her to a queenles nucleus? How long can she be kept in it? INDIANA.

ANSWERS.—1. I doubt if he is very sure. If a queen does not lay before she is 2 weeks old she is a rather slow coach, and she oftener lays when she is 8 or 10 days old.

2. A queen's wing that is clipped will not grow again; never, never; no, not the least little bit.

3. Yes, a swarm will be heard to make exactly the same noise, whether the queen be clipped or not. But of course a clipped queen can not go with the swarm, and when the swarm finds out the queen is not with them they will return to their old home, unless you set a new hive on the old stand for them.

4. She can be thus kept, sometimes a week, sometimes 3 or 4 weeks, or possibly longer. Much depends upon having the right temperature for her. Likely somewhere about 80 or 90 degrees would suit her best.

Miscellaneous Questions

1. In stapling on queen-cells, do you ever have the bees tear them down?

2. Don't you think ⅜-inch too thin for outer walls of chaff-hives?

3. How long will they last, if you have ever seen them used?

4. Which is better, ⅜-inch outer and inner walls with 2 inches of packing between, or ⅞-inch outer with ⅜-inch inner, with an inch space packed or dead-air?

5. On page 254 of "Forty Years Among the Bees" you give a plan of increase of 9 to 56 colonies. Have you any comment to make on this plan? I am going to try it this year.

6. Is a block of wood just as good as grass for an entrance-closer for a nucleus, removing same in 4 or 5 days?

7. Is there any trouble with robber-bees bothering new nuclei?

8. Is it best to set nuclei quite a distance from strong colonies?

9. Feeding 9 parts water to one of sugar outdoors—don't you think this would cause robbing?

10. Where foundation in sections has been partly drawn by the bees last year, will it do to use those sections and foundation this year, or would I better cut it out and put in new foundation?
MISSOURI.

ANSWERS.—1. No, if the cell is torn open at any point, no matter how little, the bees will destroy it; if the cell is entire it will remain so. This refers, of course, to a time when the bees desire a queen-cell; if they do not desire it they will tear it down at any time, no matter how sound.

2. In case of a double wall there is likely but little difference between ⅜ and a full inch.

3. I have not had any.

4. I don't know; with close joints I believe I would chance the first.

5. The plan is a good one if you do not care for any honey; but the danger with many would be that they would overdo the thing and try to go too fast. There is danger, too, of keeping up the division too late, and going into winter with some colonies too weak to winter.

6. Perhaps in some cases; generally not. The grass allows a trifle more ventilation; and if you forget to open it at the right time the bees will do so. Besides, it is just possible that the bees will be less likely to return to their old home if they can just squeeze through one at a time than they will with a full opening.

7. I came pretty near saying always. I'll modify that by saying always if honey is not yielding, and care should be taken even when it is yielding.

8. I don't believe it makes much difference.

9. Not unless some blundering work is done about it. If the feeding be done a few rods from the hive there may be no more danger than when bees are gathering nectar from the flowers. For remember that when bees are gathering from buckwheat in the forenoon with nothing to do in the afternoon, there is danger of some dishonest work in the after part of the day.

10. If it is clean, with no remains of candied honey, use it again.

Honey-Dew Questions

1. Does honey-dew ever appear before July 1st?

2. Will bees work on honey-dew during a flow from clover or basswood?

3. Are we liable to have a flow of honey-dew any time during the summer?

4. How often in the last 10 years has honey-dew damaged your white honey?

5. What weather conditions are agreeable to the plant-louse? OHIO.

ANSWERS.—1. I think it does.

2. Not to any great etxent. They prefer the better article of food.

3. I suppose we are.

4. Never once; nor, I think, in 29 years. I think I have never been seriously troubled with honey-dew more than twice in 50 years. So you see I'm not the best authority on that subject, and it may be well for you not to place too much dependence on my answer.

5. I don't know. I suppose that like other folks they like pleasant weather. Likely, however, your question has reference to the kind of weather most likely to make trouble for the bee-keeper on account of honey-dew. As to that, one would not expect much trouble from plant-lice during a rainy time when the honey-dew is washed away. On the other hand, hot, dry weather causing the liquid to condense on the leaves, would have a tendency to make it more attractive to the bees. But, as already intimated, it is likely that the presence or absence of honey from good sources has more to do with the case than weather conditions. Please remember that a plant-louse is a plant-louse; it must keep at work to live, and it can not make too much concession to weather conditions.

Do Bees Carry Disease to Fruit-Trees?

Do bees carry any diseases? The other day Mr. John J. Myles visited my bee-yard. He is quite an intelligent young man, and resides in Washington on a farm. He also wants to start in the bee business. He raises alfalfa and fruit, and his neighbors do the same. He came to me to get information about bees. Of course, I recommended the literature first, such as bee-papers, bee-books, etc., and showed him all I could about my bee-hives. He said the fruit-growers are complaining that the bees carry black rot on apple-trees from one to the other, and that he is afraid they would prohibit him from keeping bees on his own place. He also said that the fruit-growers have the same complaint about the black rot on apple-trees, where they really do not keep bees, and they want to destroy all the bees to save their apple-trees from black rot. I was astonished when I heard such a report.

I have been raising trees myself over 30 years, and I planted over 80,000 trees the last 4 years, and most of the time I am among the fruit-trees. I have kept bees all the time among the fruit-trees. I never saw that the bees did any damage to apple-trees or any other trees, blossoms or vegetation of any kind. They do no harm to any fruit or grapes. But if there is any harm done, the orchard man or some scientific man sits in an office somewhere in town and writes articles for the papers for which they get paid, and, as a rule, some of them can't tell a peach-tree from an apple-tree; and with regard to the growers, if they would investigate what they spray the trees with, and when they spray the fruit-trees, they probably would find out that it is not the bees, but some other cause of the black rot on apple-trees. It may be the shallow planting, and may be spray of arsenate of lead, or some other cause But I know one thing is sure, that I lost my best apple-trees by spraying with arsenate of lead for the coddling-moth. I quit the arsenate of lead and have no trouble in my orchard. I use a different kind of spray which will do no harm to the trees. The arsenate of lead will not only poison the tree, but it will do no good to the fruit and to the bees. There is a chance to poison all.

If the fruit-growers want to destroy bees, then they may start destroying flies, ants, yellow jackets, bumble-bees, wild bees, and all the singing birds, and then they will see that they will have no disease on the trees—and no fruit at all, either. OREGON.

ANSWER.—That's a new one on me. Didn't know that bees were ever accused of carrying black rot, although I have heard them accused by ignorant people of doing very bad things. How can they carry black rot? Is there anything about it to attract bees in the least? Even if there were, how would they or could they be induced to carry it to a sound fruit? There is nothing about a sound apple to make a bee want to visit it, for bees are not in the habit of going where there is nothing for them to get On the other hand, where there are no bees there is pretty certain to be more or less a failure of the crop. In the last number of Gleanings one of the Canadian officials is reported as saying that he believes the benefit obtained from bees in the way of fertilizing blossoms amounts to five times as much as the honey they gather.

Glad you have struck upon a spray that does not injure bees. Perhaps it is the new dilute lime and sulphur solution, which, it is claimed, does no harm to bees, because the smell of the sulphur is so disagreeable that the bees will not touch it.

Dahlia Flowers and Bees

In his Pharmaceutishe Praxis, Dr. Hager states that "dahlia flowers are poisonous to bees." (Vol. 3, page 718). Kindly tell me if his statement is true. SOUTH AMERICA.

ANSWER.—I don't know. It's the first time I've ever seen such a statement. Can any of our readers tell anything about it? The fact is that I have never noticed bees working on the flowers of the dahlia. But nearly all that I have seen are double flowers, and botanically such flowers are a sort of monstrosity, on which bees do not work as they do on the single varieties.

Curing European Foul Brood

Last fall I found European foul brood in my apiary. I destroyed 4 colonies, but I am afraid I will find plenty of it in the spring, so I ask you to put me on the right track to get rid of it. I have about 45 colonies.

KENTUCKY.

ANSWER.—You have made the mistake made by so many, of skipping in your reading the things written about foul brood until the enemy is upon you. It's ever so much better to be prepared in advance for the attack. The first question is whether the disease is, as you say, European foul brood, or whether it is something else. Fortunately you have a good friend at Washington. Write to Dr. E. F. Phillips, Agricultural Department, Washington, D. C., and he will send you fuller information than I can give you in this department, and he will also send you a box in which you can mail to him a sample of the diseased brood, which he will have analyzed, and then he will tell you what is the disease, and what to do. Not only will all this cost you nothing, but he will also send you a frank, so that the postage on your sample will cost you nothing.

Baldridge Treatment for European Foul Brood

I see by a report in the American Bee Journal that your bees swarmed out when treated by the McEvoy treatment for European foul brood. So did mine—15 out of 20 when using that treatment for American foul brood. The Baldridge treatment is a success every time when used correctly. Have you the Baldridge treatment for European foul brood? We have not the European variety yet. I hope to be ready when it does come. There is plenty of the American variety, however. When you have an opportunity try the Baldridge treatment and report, if not too much trouble.

CALIFORNIA.

ANSWER.—No, I have not tried the Baldridge treatment, and I hope I may not have American foul brood enter my locality so as to give me a chance to try it. Neither do I expect ever to have the European variety so severe as not to yield readily to the dequeening method without having to remove the combs either by the McEvoy or the Baldridge treatment.

Sylviac Method of Bee-Keeping

I have some notion of engaging in bee-keeping, and would like to know all about the best methods, profitableness, etc. I would like best the Sylviac method, as giving least trouble. It is to be hoped that more than 12 to 24 cents a pound can be obtained for honey. MARYLAND.

ANSWER.—To tell all about the best methods of bee-keeping would be going outside the scope of this department, but it is nevertheless within its scope to advise you as to your course. Your first move is to get one of the excellent books of instruction upon bee-keeping. As you are a German, perhaps you might like best the German edition of Root's "A B C and X Y Z of Bee Culture." (Send order to the American Bee Journal office. The price is $2.00.)

The Sylviac method is not, to my knowledge, used by any one in this country.

In Germany you are accustomed to high prices, and 12 to 24 cents seems a low price for honey. I am afraid you will be disappointed in expecting more. But the difference in results in other respects is such that in spite of lower prices here I think you will find bee-keeping more profitable than in Germany.

REPORTS AND EXPERIENCES

Bees Wintered Nicely

My bees have wintered nicely in spite of the hard winter. The prospects are good for a fine honey season.

Morgan, Ky., Mar. 8. J. P. MOORE.

Bees Seem to be Wintering Well

My bees are wintering well, to all appearances, although they may require careful attention and feeding when removed from the cellar.

If I find that sweet clover makes desirable cattle pasturage, I shall sow a good deal of it, and thus ward off such conditions as we had last season, due to a scarcity of bee-pasturage.

GEO. F. WEBSTER.

Sioux Falls, S. D., March 11.

Long Winter for Bees

I came home the Saturday after the Wisconsin convention (Feb. 24), and the thermometer has been below zero every night since then. I hardly know as yet how my bees will come out. There are more dead bees than I ever had before, and then, again, I have a good many colonies that hang below the bottom-bars. I winter with the bottom-boards off. The temperature in the cellar has not been below 42 degrees, or above 49 degrees, this winter. All the stores the bees have are from fall flowers. There are very little signs of dysentery, as yet.

Robbins, Wis., Mar. 4. G. C. CHASE.

Valued Rainfall in California

We have just had one of the most valued rainfalls in the history of the State; that is to say, it saved the country from destruction for lack of rain. Everything was just on the edge, and could not stand much longer, especially grain crops which were yellow in many places. Sage began to grow rapidly during the dry spell, and no doubt there would not be enough honey for the bees for next winter had no change come so suddenly for the better. A good crop of honey is fairly certain now.

W. F. HACKMANN.

Salinas, Calif,., Mar. 6.

Paint for Painting Hives

May I be permitted to supplement Dr. Miller's recent answer to an inquiry about painting hives by saying, use no turpentine in any paint for bee-hives. Use "raw" linseed oil only, and as little of liquid drier as will cause the surface to dry in 4 to 6 hours on a warm, dry day.

The best way is to purchase the materials and mix the paint in quantity as needed. There is no economy in buying small quantities, or cheap quality. I have no respect for ready-mixed paints. White lead can be preserved after the keg is opened, by covering with the raw oil and a close-fitting top. Also hang (not stand) the brush in the raw oil to cover the bristles—that is, if we don't wash it right away.

I have found it best to leave the alighting-board bare of paint. If painted, the rain and the dew collect in drops and puddles, which either keeps the bees in the house when they might otherwise go out safely, or if they attempt to pass they get on their backs in the water and many perish. If the wood is unpainted no puddles form, the water runs off, and the bees are not affected.

New Jersey. BEE-KEEPER.

Slight Rainfall So Far

The rainfall has been so slight that the bee-keepers are very doubtful of securing any honey at all. This applies to the State in general, but the southern portion has had less rain than the central or upper part, but we are promised plenty by the weather-man, so we are all hoping and praying for the much-needed and ever-refreshing rains. The snow on some of the mountains so far this season has been only 24 inches, and other years they have had as much as 100 inches.

J. C. FROHLIGER.

Berkeley, Calif., March 1.

Some Bee-Keeping Experience

We had the heaviest honey-flow I ever experienced, last spring. In the middle of July the long, hot drouth set in, and during Spanish-needle time it rained so much I had to do a little feeding. I secured 1000 pounds of section honey, and sold it at 12½ cents a pound; I extracted 200 pounds which sells here at 10 cents a pound. The finest white clover honey I ever saw—went like hot cakes to my home trade.

I winter my 31 colonies on the summer stands in 8-frame dove-tailed hives, with shavings on top. It is hard in this locality to keep the Italian bees as all the neighborhood has black bees. Quite a number of bees are still kept in box-hives here. I have handled bees for nearly 20 years. I started with nail-kegs and cracker-boxes, and got the bees out of trees. The more I handle them the better I like them. Experience does the business, and the American Bee Journal I would not do without. I hope to have a big honey crop next summer.

By the way, a good friend of mine from Sedalia, Mo., Dick Lankenaw, a bee-keeper who has nearly 50 colonies of Italians, and takes the American Bee Journal, visited me the last day of the old year. He has quite an experience with bees, and made himself a 4-frame extractor as he is a good blacksmith. He secured 1000 pounds of honey in all, extracted and section, in 1911. He told me of an experience he would not soon forget, and is worth reporting. He and a Mr. Sullivan had bought 13 colonies of black bees, 3 miles out in the country at 50 cents per colony, in the old-fashioned hives, with 3 or 4 supers on each hive, all plump full of honey. The hives were rotten and not in a condition to transport. One day in August, during a drouth, they went in the evening with a one-horse spring wagon with the intention of loading everything on the wagon. When they lifted the hives they all fell apart, and robber-bees had a feast, as all might know. In canvas and covers they were wrapped up, and they had a full load. The next day the horse was unhitched from the spring-wagon and tied with a good halter 100 yards from where the hives were left, and the spring wagon pulled up by the men. A large amount of bees had stayed there from the day before, and they were mad as tigers. Smokers, veils and gloves were used. Soon a big swarm of bees stung the horse Mr. Sullivan ran to the horse, while Mr Lankenaw kept on smoking. A thick swarm followed Mr. Sullivan. The latter tried to kill the rascals on the horse. Quick as lightning they made for the barn. Those mad bees all followed them, and the whole barn was full of bees. They still stung the horse. The next jump was to the thick brush near the creek till it got dark. Mr. Lankenaw still kept on smoking the bees, and had a time to call and find his partner. Covers were tied around hives when loaded, and the wagon was pulled by hand till everything was safe.

A good friend of Mr. Lankenaw, Charles Dale, had some nice honey in deep frames, Mr. Lankenaw intended to extract for him. The latter had his arms full of boxes, and Mr. Dale wheeled the honey on the wheel-barrow. It was very dry, and the bees were mad and stung Mr. Dale on his head. While shaking his head from one side to the other he upset his wheelbarrow and honey, some combs breaking out of the frames; still a big success was made in extracting the honey.

Wm. Sass.

Concordia, Mo., Jan. 25.

Concrete Hive-Parts

Mr. Someone writes recently about concrete hive-boxes, bottoms and slabs to go in front of the hives. While in this climate such parts would be mighty cold in the spring, it may be possible that a sawdust concrete might help keep the alighting-board, or bottom, warm. The following clipping was sent to me, so I do not know to whom to credit it:

Sawdust Concrete for Indoor Uses.

"When sawdust or wood pulp is used as part of the aggregate in mixing, the resulting concrete is of light weight and low tensible strength, but has some special properties that commend it for certain indoor uses, states a writer in The Cement World. On account of its elasticity, combined with its practically non-absorbent character, it is said to be especially adapted as a floor veneering for markets, butcher shops, saloons, etc.

"It may be laid without joints in a continuous layer one and a half inches deep, upon paper spread over the floor that is being treated. In these cases the customary proportions for mixing are one part cement, two of sand and two and a half sawdust. A greater proportion of sawdust would make it too absorbent.

"A novel application of sawdust concrete has recently been made in the New Public Library building in Springfield, Mass. It was employed there as a base on which to lay the cork carpet covering the floors. The object was to obtain a layer into which nails could be driven and which at the same time would hold the nails.

"The company that laid it states that it accomplished both purposes. After several experiments with different mixtures it was found that a 1:2:¾ mix—three-fourths of a part of sawdust—gave the desired results; and 5,000 square feet of this mixture was laid. The thickness of the layer was one inch, and after four months of service indications are that the material is a success."

If one must make such pieces of concrete, I might tell the inexperienced that a wood form is not really necessary, but is desirable, on account of the smoothness of the resulting piece.

A mould is best made of ⅞-inch lumber nailed to 2 x 4's laid flat, open at one end for pouring. This will do for cover and block for the front of the hive, and can be made as much thinner as one wishes. The bottom-board can just as well as not have a raised edge on the sides and back, a thin piece of lumber being nailed on the bottom of a form. This must be nailed, and the nails clinched, but the cover must be fastened

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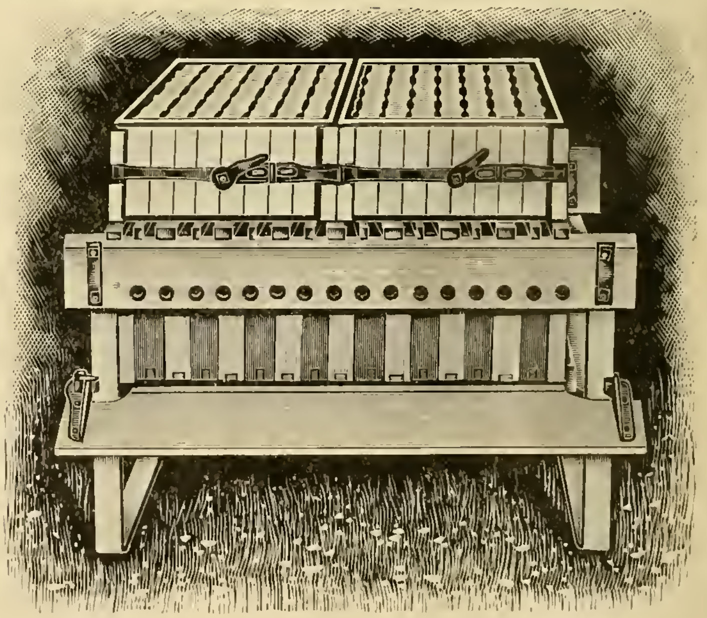

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with screws, and all must be soaked with water before the cement is poured in.

Dr. A. F. Bonney.

Buck Grove, Iowa

Following Many Advisers—Swarming

How long would it take a beginner to get rich if he read and undertook to follow all the writers that contribute their ways of managing bees? I think some of them would come out about as I would if I undertook to send a twenty-dollar by one of our northeasterners. The result would be about the same. For instance, destroying brood to stop swarming. There is lots written on that. Now, I would like to know how to *make* them swarm, as I think in this section I could get just as much money and more increase, as a rule.

I have about 120 colonies, spring count. I run one-half for comb-honey; from them I get 5 to 8 new swarms; from those I extract. For the last 13 years I have had 2—one came out with a virgin queen, the other in September after the honey-flow was over. I never extract until August, after the white honey season is over.

I have tried not putting sections on some of my best colonies until I saw I was losing the best of the honey season, they hanging out all over 3 sides of the hives, and it made no difference—the result was the same. Now, I don't think it is the location, for when I used to have black bees, almost every strong colony, if a good year, would send from one to seven swarms—as a rule, one to three.

The first queens I ever got were 20 from New York. They swarmed themselves to death the first season after putting them in. They had no honey in the fall, while the black bees did well. I wrote to the party and he told me what kind they were, and thought I would be well pleased with them. I think he called them Holy Land queens. My bees are quite dark, as they get older. I sent for the lighter colored queens.

C. M. Lincoln.

West Rupert, Vt., Feb. 24.

Asphalt Felt for Wrapping Hives

The following conclusions on the subject of winter hive-wrapping may be of use to some one open to suggestion:

I regard tar-paper of any kind and every kind as objectionable when exposed to the weather, by reason of shrinking, hardening, cracking, dribbling, too, in hot weather, and brittleness when cold. The tar odor is very disagreeable while it lasts.

Tar-roofing felt is too stiff and heavy for hive-wrapping, and the tar-sheathing paper is too flimsy and unsubstantial. Three-ply tar-roofing is very effective for damp-proofing a cement floor or cellar wall applied while building, but as a roofing material it is far surpassed by ready roofings which are composed of asphalt compounds without a trace of tar. I am using a roofing felt of this character for hive-wrapping, and a heavier grade (otherwise the same) for the roof of the honey-house, with great satisfaction. Also my hive-roofs are covered with the same lighter grade, which has stood the weather and handling without damage. It is not brittle in cold, nor mussy in hot weather.

This material is 32 inches wide. My method is to slit it lengthwise, making 2 strips 16 inches wide, then cut off lengths sufficient to go around the hive and top 3 or 4 inches. Place around the hives, tie with a couple of turns of strong twine, slit down at the covers to the top of the hive, then fold the free edges in over the hive, lay a piece of the felt on the turned-in edges, and put on the cover with the weight on top. The lap should be placed at the front of the hive.

These wrappings can be worked out, cut and creased over an empty hive in the shop, rolled up with the right length of string around each, all ready for use.

Flat sheets of paper are not an effective insulation unless a considerable thickness is used, say one-half inch or more. A single sheet of paper will stop the passage of air, but cold will strike through many sheets almost instantly.

This question of insulation deserves consideration separately. Old carpet, or burlap (which is not so good) can be made into jackets to pull down over the hive, the wrapping being put on over it, with care, to cover the jacket effectively to keep it dry and snug. A few tacks can be used to advantage around the bottom. I use a super-cover on each hive the year around, tacking it down with ¾-inch wire nails in the fall. In the spring these wrappings are carefully taken off, rolled up, the string tied around each roll, and then put away on end until fall; the top pieces are laid flat; the jackets are folded tightly and wrapped in paper to keep out moths. I would consider this sort of winter protection practicable up to say 20 hives; beyond that number, double-walled hives or cellar-wintering might be more convenient.

This asphalt felt, under various trade names, is not as cheap in the beginning as tar-paper, but there is more satisfaction with it, and I expect it to outlast the paper many times over. I have had 2 years' experience with it. I piece the jackets together over an empty hive-body in the shop at odd times, using a bag needle and grocer's twine. When made in this way there is no difficulty, and the jackets fit any similar hive.

New Jersey. M. Spacer.

More Rain Needed in California

We had a splendid rain here 8 days ago, and tonight it is raining again, accompanied with the worst windstorm of the season, which is doing considerable damage. It will take much more rain to give us honey. Bad north and east winds have taken all of the moisture previous to 8 days ago. It is hard telling what the season will be. March 2d there was over 3 inches of rain at the Coast, and 4 to 5 and 6 inches in the interior; tonight will add another or more, but this will still not give us a honey crop. It will take much more rainfall.

M. H. Mendleson.

Ventura, Calif., Mar. 9.

Bees Wintered Well

Our bees have wintered well, as far as I can hear from all around me. My own have come through the winter in good shape, though they have consumed more stores than they did up to the same time last year. I think they will need close watching to keep up their strength. They are out almost every clear day now.

I could not think of getting along without the American Bee Journal. I cannot see how any one interested in bees could get along without so valuable a helper which it certainly is to all, novice and veteran alike.

E. Vanderwerken.

Stamford, Conn., Mar. 15.

A Gold-Nib Fountain Pen

This is really a good Fountain Pen. As far as true usefulness is concerned, it is equal to the higher-priced, much-advertised pens. If you pay more it's the NAME you are charged for. The Gold Nib is guaranteed 14 Karat gold, Iridium pointed. The holder or ink-barrel is hard rubber, well finished. The cover fits snugly, and can't slip off because it slightly wedges over the barrel at each end. This Pen is non-leakable. It is very easily cleaned, the pen-point and feeder being quickly removed. The simple feeder gives a uniform supply of ink to the pen-point without dropping, blotting or spotting. Every bee-keeper should carry one of these Pens in his vest-pocket right along. It is mailed in a neat box with plain directions and a filler. Each Pen is guaranteed.

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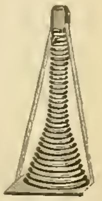

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Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

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WANTED—All Southern Idaho bee-keepers to know they can get all kinds of Bee-Keepers' Supplies at home. Write for catalog. I have my own factory. C. E. Shriver,
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GOLDEN and 3-band Italian Queens (strictly free from disease). Tested Queens, $1.00 each; 3 for $2.75; 6 or more, 85 cts. each. Untested, 75c each; 3 Queens $2.00; from 6 to 50, 65 cts. each. Bees by the pound, $1.00. Nuclei, per frame, $1.25. Safe arrival and satisfaction guaranteed. C. B Bankston,
2Atf Buffalo, Leon Co., Texas.

FOR SALE—131 acres of extra-fine farming land in the famous San Saba Valley. All tillable, enclosd with 8 wire fence; good tank of water, 20 acres fenced off; 10 acres in cultivation. Plenty of oak and mesquite timber; good bee-location, and will grow pecans —near largest pecan orchard in Tex. If sold at once, $35 an acre. L. B. Smith, Rescue, Tex.

FOR SALE—An apiary of 240 colonies with all appliances for managing this number of bees in an up-to-date manner for extracted honey. In the far-famed Hudson River Valley, on a location which has not failed in 32 years to give a paying crop of honey. The encroachment of the city, which necessitates the removal of the bees, the cause of selling. Correspondence solicited from those only who mean business.
James McNeill, Hudson, N. Y.

Connecticut Convention.—The annual meeting of the Connecticut Bee-Keepers' Association for the election of officers, etc., will be held Saturday, April 13, 1912, at the Y. M. C. A. Building, Hartford, beginning at 10:30 a.m. The matter of forming a branch of the National Association will be discussed. Good speaking assured.

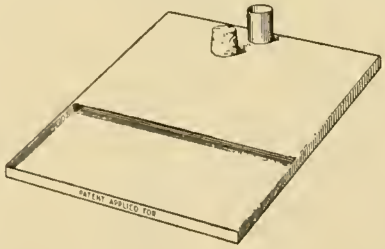
JAMES A. SMITH, *Sec.*
Hartford, Conn.

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and ¼ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.

In case of foul brood you can feed medicated syrup and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.



Some of the many good points of this Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.

I am in position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—A. H. OPFER, 117 N. Jefferson St., Chicago, Ill.

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HONEY
Both COMB and EXTRACTED
Write us before disposing of your Honey Crop.
Beeswax
—WANTED—
HILDRETH & SEGELKEN,
265-267 Greenwich St.,
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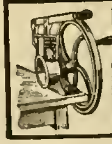
Please mention Am. Bee Journal when writing.

To The New Century Queen-Rearing Co.

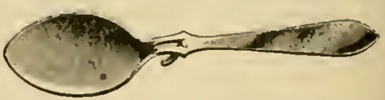
FOR
Goldens,
Caucasians,
Carniolans,
3-b'd Italians
Untested, $1.00; Tested, $1.50.
Write for prices in large quantities. "Right Treatment and Quick Service" is our motto. Address as above, or
JOHN W. PHARR, Propr.
BERCLAIR, TEXAS.
Please mention Am. Bee Journal when writing.

Crown Bone Cutter



FEED your hens cut green bone and get more eggs. With a Crown Bone Cutter you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.
WILSON BROS., Box 814, Easton, Pa.
Best Made. Lowest in Price
Please mention Am. Bee Journal when writing.

English Honey-Spoon.



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The Muth Veil is made of light-weight indestructible wire and strong cambric, and will last a lifetime. Fits nicely around either a straw hat or a derby, and is easily put on or off in a jiffy.

It is comfortable, and there is no chance for a bee to crawl up under it when properly adjusted,

The Muth Ideal Veil cannot be blown into your eyes, nor stick to your face, and does not obstruct your view in the least. When catching a swarm in a tree or bush, it cannot hang on the twigs to be torn to shreds as some other Veils do.

Price, postpaid, 75 cents; or with the American Bee Journal a year—both for $1.60 or FREE as a premium for sending us 2 new subscribers at $1.00 each.

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Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."

OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

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How have your bees wintered? Have they wintered satisfactorily? Are they somewhat weak? Would you like your colonies to winter in better condition? Carniolans stand the long, cold winters of our Northern States the best. Write for "Superiority of the Carniolan Bee," telling you about their wintering qualities. **It's Free.**

Albert G. Hann, Scientific Queen-Breeder, **Pittstown, N. J.**

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Mated in separate yards five miles distant. Bred from Improved Long-tongued and Red Clover stock—the best honey-gatherers that money can buy. Reared by Doolittle or Miller plan.

Untested Queens, to be ready May 1st, one 75 cents.; 12 for $7.50; 50 for $25.00; in lots 100 to 500, $45.00 per 100.

Tested Quhens, ready May 15th — one for $1.50; six, $8.50. No bee-disease in this country. Safe arrival guaranteed. 4Atf

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"The Amateur Bee-Keeper"

This is a booklet of 86 pages, written by Mr. J. W. Rouse, of Missouri. It is mainly for beginners—amateur bee-keepers—as its name indicates. It is a valuable little work, revised this year, and contains the methods of a practical, up-to-date bee-keeper of many years' experience. It is fully illustrated. Price, postpaid, 25 cents; or with the American Bee Journal one year—both for $1.10. Send all orders to the office of the American Bee Journal.

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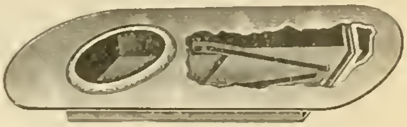

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Choice Home-Bred and Imported Stock. All Queens reared in full colonies.

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One Tested Queen	$1.85
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Safe arrival guaranteed.

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Successors to the York Honey & Bee-Supply Co.) **Send for Catalog.**

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GOOD LAYING QUEENS

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Untested—1 for $1.00; 6 for $5.40; 12 for $9.60; 25 for $17.50
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Nuclei with Untested Queen—1-frame, $2.50; six 1-frame, $15.00
" " " " —2 frame, $3.50; six 2-frame, $20.40
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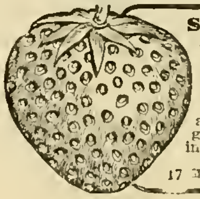

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THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months—¼ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

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The best to be found of each. Will be ready as soon as you can use them. Let me book your orders now.

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Italians AND Carniolans

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Warranted	1.25	5.50	11.00
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Select Tested, $2.00 each.
Breeder, $3.00 and up.

Nuclei and Full Colonies.

Bees dy the Pound. Write for Circular. Apiaries inspected for brood-diseases.

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Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

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Send for Samples.

All other Bee-Supplies at prices you will appreciate.
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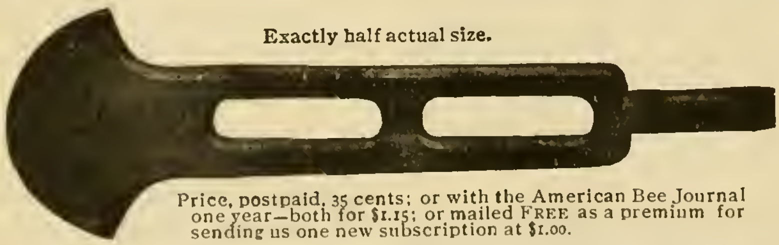
The Ideal Hive-Tool Free as a Premium

Exactly half actual size.



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This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semicircular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever." Address all orders to,

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INSURES your crop against **DROUTH** Our experience in 1910 and 1911 has proved that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 had a crop in 1911.

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When you write ask about the **Campbell Correspondence School.** 8Atf

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Makers of Weed New Process Comb Foundation.

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Catalogs Free.

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Please mention Am. Bee Journal when writing.

Early (FROFALCON) Queens "ITALIANS"

February and March deliveries—for Untested, $1.50 each; April, $1.25. Tested Queens, 50 cts. additional; Select Tested, $1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,

257-9 Market St., **San Francisco, Cal.**

Or Berkeley, Cal.

Please mention Am. Bee Journal when writing.

COST SALE

Of **BEE-KEEPERS' SUPPLIES for the next 4 months.** Too big Stock to carry over. Write your wants; I will make price to suit. Sept. 26, 1911.

W. D. Soper, 323 and 325 Park Ave. **Jackson, Mich.**

Please mention Am. Bee Journal when writing.

SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by

Colorado Honey-Producers' Association,

DENVER, COLO.

Please mention Am. Bee Journal when writing.

For Sale—15 Eggs $1.00

Indian Runner Ducks—White and Fawn.

2-3 **J. F. Michaal, Rt. 1, Winchester, Ind.**

HONEY AND BEESWAX

CHICAGO, March 22.—Despite the cold weather honey has not sold as freely during March as has been its wont, and all grades of comb honey other than A No. 1 to fancy are difficult to sell. For the best grades the market is firm at 17@18c per lb., and the off grades are from 1@5c per lb. less. Extracted honey is steady in price, but the movement is not large, and with stocks now on hand the prices are not likely to be any higher. White extracted ranges from 8@9c per lb., with amber from 7@8c, all according to kind, body and flavor. Beeswax is in good demand at 30@32c per lb.
R. A. BURNETT & CO.

INDIANAPOLIS, Mar. 22.—White comb honey sells at 18c per pound in 10-case lots. Amber grades in slow demand and at lower figures. Best extracted sells at 11@12c per pound in 5-gallon cans. Jobbing houses are well supplied, but producers are not now offering any honey. Beeswax is in good demand, and produces are being paid 31c per pound.
WALTER S. POUDER.

KANSAS CITY, MO., March 22.—Our market is cleaning up fast on both comb and extracted honey. No change in prices. We quote: No. 1 white comb, 24-section cases, $3.25; No. 2, $3.00; No. 1 amber, $3.00; No. 2, $2.75. Extracted, white, per pound, 8½@9c; amber, 8@8½c; dark, 5½@7c. Beeswax, per lb., 25@28c. C. C. CLEMONS PRODUCE CO.

CINCINNATI, March 23.—There is a fair demand for both comb and extracted honey. We are selling the very finest grade of comb honey at $3.75 to $4.00 a case, while for fancy extracted honey we are getting 9@11c a lb., according to the quality and quantity purchased; amber honey, in barrels, is selling for 6@7½c. For strictly choice, bright yellow beeswax, we are paying 30c a lb. delivered here, and 1@2c a pound less for darker grades. THE FRED W. MUTH CO.

DENVER, March 23.—We have no comb honey to quote; our market is entirely cleaned up. Our jobbing quotations on white extracted are 9c; light amber, 8c; strained, 6¾@7½c. We pay 26c in cash, and 28c in trade for clean, yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

SAN FRANCISCO, Mar. 22.—The demand for honey the past month has been more marked, and there is still a lot unsold. Comb honey, 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6½c. Beeswax, 27½@30c per pound for light in color, and 23@26c for dark. J. C. FROHLIGER.

CINCINNATI, Mar. 22.—The market on comb honey is about cleaned up. No. 1 white is selling in jobbing way at $3.65 per case; retail $4.00. Light amber extracted in barrels 7c; in cans, 7½@8c. White extracted in 60-pound cans, 10c. Beeswax in fair demand at $33 per hundred lbs.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

NEW YORK, Mar. 23.—We have practically nothing new to report. The market remains in about the same condition. Comb honey is well cleaned up, and what few little lots arrive find ready sale at former prices.

Extracted is not moving very fast, plenty of supply of all grades excepting California water-white and white-sage, which is pretty well cleaned up. Prices remain about the same as in our former report, but in quantity lots even these prices have to be shaded in order to affect sale. Beeswax steady at from 30@31c per lb.
HILDRETH & SEGELKEN.

BOSTON, Mar. 25.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. BLAKE,-LEE CO.

Names of Bee-Keepers Wanted.—We desire very much to have the names and addresses of all the bee-keepers who are in your locality who do not now take the American Bee Journal. We would like to get every one of them on our list of regular readers. If you will send to this office the names and addresses of such bee-keepers, we will be pleased to mail each a sample copy of the American Bee Journal. Perhaps you could send in their subscriptions, and thus earn some of the various premiums that we offer from time to time for getting new subscriptions. We feel that every bee-keeper ought to read the American Bee Journal regularly. He would not only be more successful, but would be less of a competitor of his neighbor bee-keepers, if he were more enlightened on the subject of bees and honey. We would appreciate it very much if all who can do so will send us the names and addresses of their bee-keeping neighbors who do not at present receive the American Bee Journal.

Are You Ready?

The season is advancing; the long, cold winter is about over.

Bees will be breeding up soon for the early honey-flow, and Supplies should be on hand ready for instant service when the time comes.

We have a Large and Complete Stock of Root's Goods, and cars are coming in regularly.

There is nothing in the Line we can't furnish promptly, and we can save you time and money.

Our New Catalog is ready for you.

Get your Supplies from us at factory prices, and save on transportation charges.

We can reach any point in this locality very promptly, and can get the Goods started to you the day your order is received.

You know that you can't get better goods than Root's, and we want the chance to show you that our SERVICE is worthy of your consideration.

Let us know your needs and we will do the rest.

C. H. W. Weber & Co.

2146 Central Ave. CINCINNATI, OHIO

"Falcon" FOUNDATION

PROCESS OF MANUFACTURE.—The very best grades of beeswax, clarified without that acid taste or odor which is so obectionable in some makes, sheeted by our heavy pressure process, reduced and polished by smoothrolls, allowed ample time to cure, is finally passed through embossed power mills, resulting in that cear, absolutely pure product, **FAMOUS THE WORLD OVER, "FALCON" FOUNDATION.** No detail, from the buying of the beeswax to the packing of the product, is slighted. The care and skill n cleansing, the absolute purity from all foreign matter, the enormous pressure in sheeting into continuous belt-like sheets, the transparency and perfectness of the finished product, with the appearance and smell of the hive itself (for it is indeed the product of the bees, purified, embossed and returned for their use), has made a product, **"FALCON" FOUNDATION,** which has been chosen by the bees themselves as the acme of foundations. The **"FALCON" WAY** is **OUR WAY** developed in thirty years of foundation manufacture.

QUALITY

"FALCON" FOUNDATION made by our sepecial methods has won a reputation on account of its perfect cell formation, non-stretching qualities, and the readiness with which bees begin work upon it. Our section foundation is perfectly clear, and with it is produced those pearly white sections of honey so much admired. Our brood foundation is particularly adapted for full sheets in brood or extracting frames. Its strength eliminates all stretched cells in which drone-brood is reared or elongated cells in which no eggs at all are laid. Use **"FALCON" FOUNDATION** and satisfy your bees.

SAMPLES

WE GUARANTEE every sheet equal to samples in every particular. Drop us a card for samples and they will be sent postpaid.

Get **"FALCON" FOUNDATION** of our nearest dealers. If you don't know the names drop us a postal.

W. T. Falconer Mfg. Company

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

W. T. Falconer Mfg. Co.
117 North Jefferson Street, Chicago, Illinois.

"If goods are wanted quick, send to Pouder."

Bee-Supplies

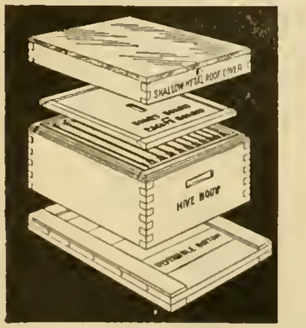
Standard hives with latest improvements, Danzenbaker Hives, Sections, Foundation, Extractors, Smokers; in fact, everything used about the bees. My equipment, my stock of goods, the quality of my goods and my shipping facilities can not be excelled.

PAPER HONEY-JARS

For extracted honey. Made of heavy paper and paraffine coated, with tight seal. Every honey-producer will be interested. A descriptive circular free. Finest white clover honey on hand at all times. I buy beeswax. Catalog of supplies free.

WALTER S. POUDER, Indianapolis, Ind.
859 Massachusetts Avenue.

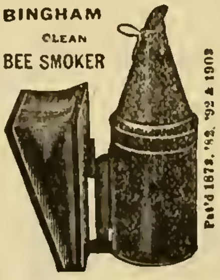
Protection Hive   Bingham Smokers



The best and lowest-priced double - wall hive on the market. This hive has ⅞-in. material in the outer wall and it is not cheaply made of ⅜ material as are some other hives on the market. Send for CIRCULAR showing 12 large illustrations. It will pay to investigate.

Manufactured only by

Insist on "Old Reliable" BINGHAM SMOKERS, for sale by all dealers in Beekeepers' supplies For over 30 years the standard in all countries. The smoker with a valve in the bellows, with direct draft, bent cap, inverted bellows and soot-burning device.



Smoke Engine, 4-inch, each, $1.25; mail, $1.50.
Doctor, 3½-inch, each, 85c; mail, $1.10.
Conqueror, 3-inch, each, 75c; mail, $1.00.
Little Wonder, 2-in., ea., 50c; mail, 65c.
Honey-Knife, 60 cents; mail, 80 cents.

A. G. WOODMAN CO., Grand Rapids, Mich.

Famous Queens!

From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $1.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens — 1-frame, $2.50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; six 1-frame, $17.40; 2-frame, $4.00; six 2-frame, $23.40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drones as well as the Queens.

We guarantee safe arrival and satisfaction.

D. E. BROTHERS,
2A9t **Jacksonville, Ark.**

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

AMERICAN BEE JOURNAL

MAY 1912

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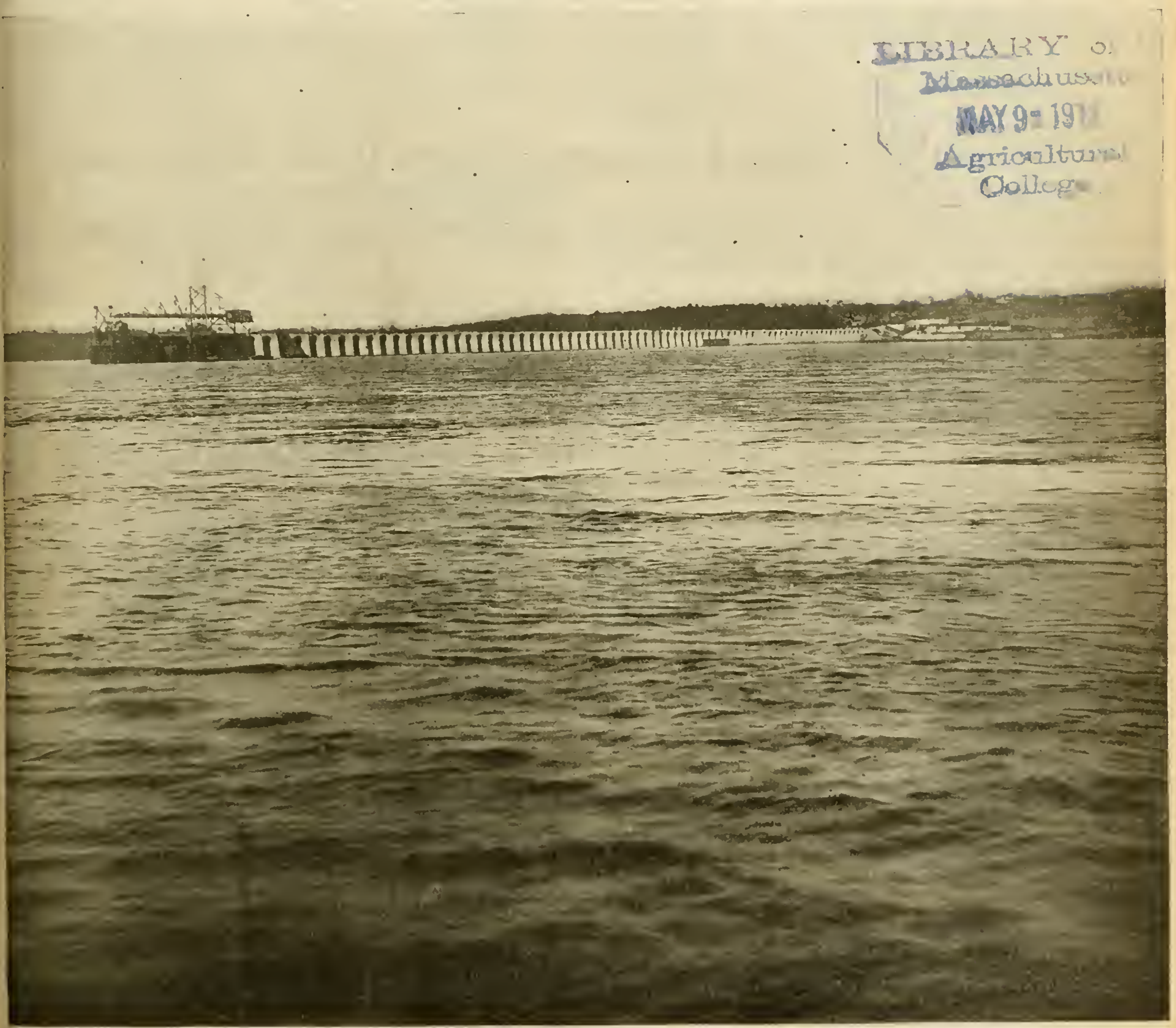

THE LARGEST ELECTRIC POWER DAM IN THE WORLD, NOW BEING BUILT ACROSS THE MISSISSIPPI RIVER, AT THE NEW HOME OF THE AMERICAN BEE JOURNAL, AT HAMILTON, ILLINOIS—DAM BEING OVER HALF MILE LONG.

This view was taken April 4, 1912, from the outer edge of the cofferdam, on the Iowa side, 1000 feet from the Iowa shore, looking across towards the Illinois shore. The city of Hamilton is at the extreme right. There are to be 119 arches, 82 of which now show in the picture. The power-house, lock and dry dock are now being built on the Iowa shore. The immense power will be generated by 30 turbines of 10,000 horse-power each. The fall, caused by the Des Moines Rapids to be flooded, is from 20 to 36 feet, according to the stage of water. The cities of Keokuk and Hamilton, on either side of the big river, have become centers of activity, and have a bright future. A view of the entire works, taken from the Iowa bluffs, will be published later in the American Bee Journal.

This immense undertaking, which is to cost over $25,000,000, was planned, and is now being carried out, by Hugh L. Cooper, probably the most capable hydraulic engineer living.

American Bee Journal

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
George W. York & Company,
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec12" on your label shows that it is paid to the end of December, 1912.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

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3 times 14c a line 9 times 11c a line
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Reading Notices, 25 cents, count line.
Goes to press the 6th of each month.

(Organized 1870.)

National Bee - Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

Officers

President—George W. York, Sandpoint, Ida.
Vice-Pres.—Morley Pettit, Guelph, Ont. Can.
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J. M. Buchanan, Franklin, Tenn.

Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.
Send Dues to the Secretary, E. B. Tyrrell.

BEE-KEEPERS

Look up your stock at once and send me a list of the supplies you need. I have a large stock to draw from to handle your orders for Hives, Sections, Comb Foundation, etc.; standard goods with latest improvements fresh from the factory at factory schedule of prices. I have a general line of **Root's Goods** constantly on hand. My facilities for serving you are unequalled.

Beeswax taken in exchange for supplies or cash.

Italian Bees and Queens

Be sure you have my 1912 Catalog of Bees, Queens and Supplies. 5A3t

EARL M. NICHOLS, Lyonsville, Mass.

Queens That "Are better"—Italians & Banats

Untested Queens, 75c each; $8.00 per doz.; two or more doz. in one order, $7.50 per doz.
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5c each extra.

½-lb. Packages of Bees after May 1st, $2.00. Select queen wanted and add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-Frame Nuclei, with Untested Queen, $2.00 each; 2-fr., $3.00; 3-fr., $4.00. Full Colony of Bees in 10-fr. hive, $7.00. Add 50c if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For 10 or more Colonies or Nuclei, deduct 25c each.

I have successfully shipped Bees and Queens from this place every month of the year. I started two colonies Jan. 25th on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at The Cotton Palace, in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are Cash with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

I have seven yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas.

Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG

Will tell you all about our

Best Bee-Keepers' & Poultry Supplies

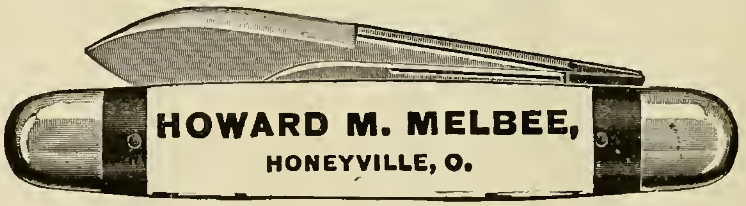
Sold at lowest living prices. We handle the Best Sections in the World—the August Lotz Sections at Lotz prices. **Three Carloads** of Goods on hand with 2 more coming.

Drop us a card and we can please you.

Catalog Free. **H. S. Duby, St. Anne, Ill.**

Please mention Am. Bee Journal when writing.

BEE - KEEPER'S NOVELTY POCKET - KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

Let Us Missouri You

By proving that our **Muth Special** and **Ideal Metal - Covered Dovetailed Hives** are better than any others on the market.

There is Extra Money in Our Supplies.

Send for Our Catalog.

WE pay the highest Cash market price for Honey and Beeswax.

THE FRED W. MUTH CO.
"The Busy Bee Men"
51 Walnut Street, CINCINNATI, OHIO

Golden Italian Bees
"Buttercup Strain"
Queens, Nuclei, and Full Colonies.

I have kept and studied Bees for 50 years. Have bought Queens for the improvement of stock from the most noted breeders from Langstroth down to the present day.

My foundation stock (from which my improved "Buttercup" strain was evolved) was originally from Alley and Pratt (Swarthmore).

They are very gentle, very handsome, very hardy, and great hustlers. I wintered 75 colonies on the summer stands last winter—the hardest on record.

Made more honey per colony last (very poor) season than ever before. Have no trace of disease.

This season I shall propagate and offer for sale after June 1st as follows:

Prices of Bees and Queens

One Full Colony in 1½ story, 8-frame Hive, complete	$10.00
One Full Colony, 8 frames one story only	8.25

Nucleus of Bees in Light-Shipping Cases After June 1st

One-frame Nucleus and Untested Queen	$2.50
Two-frame Nucleus and Untested Queen	3.00
Three-frame Nucleus and Untested Queen	3.50
Colony or Nucleus with Tested Queen add $1.00	

Queens

Selected Tested Queen	$2.50
Tested Queen	1.50
Untested Queen	1.00

The colonies I offer consist of 8 frames of bees, honey and brood, in 10-frame Langstroth body.

They will be securely packed and sent by Express at purchaser's expense.

For larger quantities of Bees or Queens write for prices. Circular free.

ISAAC F. TILLINGHAST,
State Apiary Inspector,
5A2t FACTORYVILLE, PA.
Please mention Am. Bee Journal when writing.

FOR SALE

Golden Untested Queens at 75 cents each; or $8.00 per doz. Tested Queens, $1.25 each, or six for $6.00. Select Tested, $2.00 each, or six for $10.00.

Safe arrival and perfect satisfaction guaranteed. 4Atf

R. O. Cox, Box 8, Garland, Ala.

NEW ENGLAND BEE-KEEPERS
Everything in Supplies.
New Goods. Factory Prices.
Save Freight & Express Charges
Cull & Williams Co.
4Atf PROVIDENCE, R. I.

Have You Bees for Sale?

Owing to winter losses there is a considerable demand in the country for colonies of bees. Those having bees for sale should write at once to the American Bee Journal, Hamilton, Illinois.

Untested Italian Queen-Bees
Our Standard-Bred
6 Queens for $4.50 ; 3 for $2.50 ; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co., Kan., July 15. A. W. SWAN.

GEORGE W. YORK & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada, July 22. CHAS. MITCHELL.

GEORGE W. YORK & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W. YORK & Co.:—The queen I received of you a few days ago came through O. K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. McCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

MARSHFIELD GOODS

BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

When You Buy Lewis Beeware You Get

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine bright basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched over by experts. The Lewis head mechanic has 35 years of bee-supply experience; the superintendent of bee-hive department 29 years; the superintendent of sections 28 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed — a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

G. B. LEWIS CO., MANUFACTURERS OF BEEWARE **WATERTOWN, WIS.**

If BEES could TALK

THEY WOULD SAY:

"GIVE US DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

L. L. LANGSTROTH
CHAS. DADANT

AMERICAN BEE JOURNAL

Published Monthly at $1.00 a Year, by George W. York & Company, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MAY, 1912

Vol. LII---No. 5

Special Announcement

Chicago, Ill., April 1, 1912.

We have this day transferred to Mr. C. P. Dadant, of Hamilton, Ill., the American Bee Journal, including its mailing lists and good-will, and also the future business of George W. York & Co., with good-will.

All arrearages due on subscriptions should be remitted to the American Bee Journal, Hamilton, Ill. All amounts on advertising that have been billed up to April 1, 1912, are due and payable to *George W. York*, 117 N. Jefferson St., Chicago, Ill. All advertising that has not been billed up to that date will be payable to the American Bee Journal, Hamilton, Ill.

Any correspondence that is intended for George W. York should be addressed to him *personally*, as above, till further notice.

Mr. York, of course, will always be interested in the success of the American Bee Journal, with which he has been connected 28 years, and which he has edited and published for 20 years.

We bespeak for Mr. Dadant the hearty support and co-operation of bee-keepers everywhere. He is abundantly able to produce a bee-publication second to none, and doubtless will in a very short time make the old American Bee Journal better than it has ever been before.

Thanking all who have co-operated in any way with us during the past 20 years, and wishing all our friends and readers of the old American Bee Journal a bright and happy future, we are,

Yours very truly,
George W. York & Co.

EDITORIAL COMMENTS

Our Editorial Policy

It is a pleasure for the writer to assume the control of a publication with which he has so long had friendly relations.

The American Bee Journal will aim to continue the independent course pursued by Mr. York. It will include courteous discussions of useful subjects, hints to beginners, answers to questions of daily importance on apiary incidents, description of new implements, anatomical and physiological researches on the honey-bee, treatment of bee-diseases and their eradication, honey markets and prices. With the help of able correspondents, there is enough in all these subjects to make interesting reading.

As far as we know, every one of the former contributors will remain with us; and new ones will come. The kind replies already received from the few who have been informed of the change indicate that the *old craft* will have smooth sailing and will be in no danger of *icebergs*. Dr. C. C. Miller remains as associate editor, and Miss Godfrey as head of the composing room.

C. P. Dadant.

Timely Hints for May

This is the month for spraying fruit-trees. If you have neighbors who spray their trees while in bloom, you should urge them to desist and wait till the bloom has dropped. Not only would they destroy the bees, the best friends of fruit fertilization, but they also blight a part of the fruit by poisoning the pollen. The proper time to spray is both before and after the period of blossoms. A number of States have passed laws upon this subject, and more are needed.

Colonies that are found queenless in May are worthless unless they are still quite strong in bees, and are given a a queen without much delay. It is at this time that queens reared in Southern countries are most valuable to the Northern apiarist. However, little success is achieved in mailing queens before May 15th, owing to the irregularities of temperature.

A swarm in May
Is worth a load of hay—

provided it is a bona-fide swarm, and not an absconding colony which has left its hive for want of food, or because its quarters have been befouled by diarrhea during the cold days.

Now is the time to overhaul all the empty combs in the apiary. Put into the wax-rendering boiler all drone-combs, or irregular combs. Melt up also all combs of colonies that have died of doubtful brood-diseases.

According to nine-tenths of the bee-writers, two drones cost as much as three workers to rear, and eat more without ever producing anything. Therefore, it will well repay your time to remove all drone-comb. But be sure to replace it with worker-combs, as the bees would probably refill the same space with drone-comb again.

Combs of colonies that have died in the early part of the winter, or during the coldest weather, have nothing to fear of the moth at present, as the eggs and larvæ of the moth which they might have contained are lifeless also. But colonies which have died late in the winter, or from spring dwindling, may yet contain some live worms or chrysalis. Brimstone burnt in a stone or iron vessel within a closed box or closed room will kill the moths. Bisulphide of carbon, or carbon tetrachloride, poured on a rag and enclosed with the combs will have the same effect.

This is the month when bees should breed plentifully, if you expect a June crop of honey. It takes not less than a month to make an active field-worker from the time the egg is laid. Worker-bees hatch in 21 days, but they afterwards remain in the hive as nurses for a week or more.

The most practical horticulturists know that the honey-gathering insects are indispensable to the fertilization of fruit-bloom, and they either keep bees themselves or encourage bee-culture in their immediate vicinity.

Bee-keepers of America, sustain your National Association! A new departure has been made. Give it a fair trial. No good ever came from secession or strife. You have it in your power to make a success, and success you will achieve sooner or later. Let it be sooner! Put a shoulder to the wheel. The little drops of honey make the carloads.

Bees often need feeding until the fields and pastures are white with bloom. If you feed in spring, let the feed be fairly warm and somewhat thinner than ordinary honey. The bees need water when feeding the brood, and thin feed will partly supply this need. Sugar syrup is better for this purpose than honey, because it attracts robber-bees much less than does sweet-smelling honey.

Do not feed unknown honey to your bees. This should be inscribed in large capitals on the walls of every honey-house. Tainted honey is the main vehicle of foul brood. It will do no harm to human beings, and it is impossible to detect the tainted from the untainted.

Do not fear foul brood. The writer kept bees for 40 years before he saw a sample of it. But if you meet foul brood destroy it as you would a rattlesnake. It is only upon that condition that you need not fear it. The careless bee-keeper's apiary will sooner or later be destroyed by it, if it happens to come to his neighborhood.

Can Honey-Bees Be Improved?

Dr. A. F. Bonney has shown himself a man of open mind. With the desire to have the opinion of scientific men as to the question whether the bee could be improved by breeding, he addressed a letter to several of them, at the same time candidly expressing his own belief in these words:

> "I have always been of the opinion that the bee is the most highly specialized animal alive, and that all progress, change, or improvement ceased ages ago."

The answers he received were not such as to endorse strongly his opinion.

In such a case the average man would likely have dropped the matter; at least he would not have taken pains to give much publicity to the answers received. But it seems Dr. Bonney is not an average man. Instead of pigeonholing the answers received, he has published them in the Bee-Keepers' Review, and frankly says:

> "Personally I have somewhat changed my mind about the possibility of improving the bee, or, rather, of bettering a yard filled with bees, though at present I incline to the idea that it must be done by culling out the undesirable colonies, and in connection with this work rearing a vast number of drones from excellent mothers, while we do not know but what the worst drone in the bunch will mate with our new queen."

It may be well to quote some of the most encouraging words contained in the replies. It is not likely that so many will rush into the business of improving bees as to need any discouraging words.

> Prof. W. M. Wheeler says: "My little experience with the honey-bee leads me to believe that there is no inherent reason why it should not be capable of considerable modification through experimental breeding. I believe, however, that much headway can not be made until it is possible accurately to control the mating of the queens and drones."
>
> Prof. Wilmon Newell says: "I fully believe that it is possible to get strains which will gather more honey than those we now have, and it seems within the realm of possibility that a non-swarming bee might make its appearance as a mutation."
>
> Prof. W. E. Castle says: "I am a strong believer in the efficacy of selection to modify animals of all sorts."

With all this by way of encouragement, there still stands in the way the great difficulty that under ordinary circumstances the mating of the queen and drone can not be controlled. But Dr. Bonney himself thinks that may be overcome, for he says: "In the Dakotas, where I lately spent some time, there are millions of acres which never saw a bee, treeless, flowerless plains, where mating can be controlled perfectly, I think," and he thinks a mating station in one of the Dakotas might solve the problem.

Spraying Solution Repellent to Insects

Benjamin W. Douglass says in Gleanings in Bee Culture:

> During the last two seasons a new spray material has come into very general use over the country. This is the dilute lime and sulphur solution as a substitute for the old Bordeaux mixture. The Bordeaux was simply a mixture of copper sulphate and lime, and it was used in connection with the arsenate of lead or with Paris green. The new sulphur spray requires the addition of the arsenic, just as the Bordeaux did; but it possesses the added advantage to the bee-keeper that it is repellent to all insects. The smell of the sulphur is so strung that trees sprayed with it are notably free from insects of all sorts during the period through which the smell lasts. In this way the bees are repelled along with certain injurious insects (notably the plum curculio). This repellent action of the lime and sulphur will no doubt go a long way toward easing the fear of the bee-keeper. For my own part I feel so sure of the repellent value of the sulphur that I will venture the assertion that no harm would result to the bees, even if the orchard should be sprayed while in blossom. Of course, it would be highly undesirable to spray the trees when they are in full bloom; but I simply make the statement to show my confidence in the repellent value of the solution.

That sounds hopeful, but one hesitates to be too hopeful in the matter until it be more fully established just how "general" is the use of this new spraying solution, and also as to whether it shall, in all cases, be sufficiently repellent to keep bees away from a fruit-tree in full bloom. However, a hopeful view costs nothing, unless it should have the effect of causing a let-up in the effort to secure proper legislation on the subject.

GETTING RIGHT LEGISLATION ON SPRAYING

And to secure the right kind of legislation seems to be a matter exceedingly difficult of accomplishment, at least in some States. One trouble is that fruit-growers too often stand squarely in the way, and there are more fruit-growers than bee-keepers. A bill to protect bee-keepers against loss from spraying during fruit-bloom is likely to be referred to a committee whose chairman is interested in the raising of fruits, and the bill dies in that committee. At least as our laws are generally at present.

One would think that with a chairman of sufficient intelligence there should be no trouble. Neither should there be if men were as unselfish as intelligent. In one legislature a bill against spraying during fruit-bloom was introduced. The chairman of the committee to which it was referred was a man having thousands of fruit-trees, and he promptly decided there should be "nothing doing" with that bill. When asked why not, his reply was that every fruit-grower knew that it was harmful to the crop to spray during bloom, hence there was no need of any law. A little probing, however, will show that there is something further in the background. The fruit-grower knows that to spray when his trees are full in bloom results in loss to himself. But there are among them men who reason somewhat after this fashion:

"I have a great many trees to spray, and unless I begin in good season I shall be too late about spraying some of them. To make sure of getting through in time, I must begin before all the blossoms have fallen. Even if some harm is done to the latest blossoms, the loss accruing in that way will be more than counterbalanced by the good done to the earlier fruit. Too much fruit will set anyway, and the loss of those latest blooms will be really a gain."

Whether his reasoning be good or not, it is easily seen that he takes no account whatever of the loss to the bees, which are killed just as much by poison on the latest as on the earliest blossoms. He practically says: "The bees have done their work in fertilizing the earlier blossoms, and it is nothing to me if they are killed on the late bloom. I don't want the trouble of looking out for the interests of the bee-keeper, and so I don't want any law on the subject."

So it seems likely that it will not be a good thing for bee-keepers to let up on their efforts for legislation until a proper law is obtained, *unless* it turns out that a spray comes into vogue that shall repel the bee, and which spray it shall be to the interest of the *fruit-grower* to use.

Finding a Queen

When a queen can not be found with the usual looking over the combs the first time, it is generally well to look over the combs the second time. If she is not found after carefully looking the second time, it is well to close the hive and not look again until at least half an hour has passed. To be sure, you may find her upon looking over the combs the third or fourth time, and again you may not find her if you keep looking for an hour. She is likely hid somewhere where you will not find her, and so long as you keep up the excitement she will not put in an appearance; while if you wait till a little later, or until the next day, you may find her in less than 2 minutes after opening the hive. It seems a mystery where she can be hid so safely and for so long, but experience teaches that it is economy of time to postpone the search. Sometimes, however, there may be some special reason why the delay of half an hour is very objectionable, and it may be worth while to take some plan that may take more time, yet be more sure as to result. In that case here is a good plan given by H. Harley Selwyn, in Gleanings in Bee Culture:

> "Take two ordinary deep supers; and, after placing a queen-excluder between, fasten well together with shipping-staples. Place this before the hive to be operated on, then remove one frame at a time, and, after a quick glance over each to sight the queen if possible before the bees become badly excited, shake into the empty super. Repeat this performance with each frame, placing them either in an additional super designed for that purpose, or leaning them against the hive. Now ply the smoker on the mass of bees lying on the excluder, and see them vanish through the perforations until none but frantic drones remain; and, unless fortune is against you, there you will find the queen trying with all her might to reach the heart of the underhanging cluster. A moment's glance will decide the question; and if no queen shows up, transfer your attention to the interior of the empty hive, and the chances are you will find her somewhere on the walls or in the corner of the hive."

Mr. York's Valedictory

In another column of this number, the reader will find the announcement of a change in the management of the American Bee Journal. The writer of this article, tired of life in a large city, will now locate in Sandpoint, Idaho.

In making my retiring bow, with most heartfelt thanks to my thousands of constant readers for the 20 years that have just passed, I wish to give the reasons which have prompted me to select Mr. C. P. Dadant as future editor-in-chief of the oldest bee-paper in America. For this purpose I will for a few minutes take the reader back into the early history of the American Bee Journal.

As far back as 1868, Mr. Chas. Dadant, a practical bee-keeper and a scholar, who had arrived from the Old World only a few years before, wrote a number of articles entitled, "How I Became an Apiculturist." These contributions were published in this Journal. They were well liked, and he became a regular correspondent.

In 1872, just 40 years ago, a very heated controversy took place, upon the invention of the movable-frame hive by Mr. Langstroth. This invention, which revolutionized bee-keeping and placed America at the head of the list of honey-producing countries, was decried by opponents who infringed upon it. They held that Berlepsch, Munn, Debeauvoys, Propokovitsch, and other Europeans, had invented it long before our American pioneer. In the American Bee Journal for March, 1872, Mr. Chas. Dadant came to the rescue, and averred (with proofs) that none of these inventions were practical, as none had the movable ceiling combined with the air-space all around the frames; that the American invention was positively novel and the most practical of all. He was speaking with absolute knowledge, since he had used those hives in Europe, and was now using the Langstroth frame in America.

From that time a strong bond of friendship was formed between the American champion of apiarian progress and his foreign-born supporter. But Langstroth was not only a capable inventor, he was also a keen observer and a splendid writer, as all who have read his book, "The Hive and Honey-Bee," can testify. This work was christened "the classic in bee-culture," and Langstroth himself, "the Father of American Bee-Keeping." When, after some 30 years, his book needed revising, and infirmities prevented him from doing it, he turned to Chas. Dadant, and since 1888 "The Hive and Honey-Bee" has been the "Langstroth-Dadant" book. The Dadants—Chas. and C. P., father and son—were active men. In addition to rewriting this book and translating it into French, they kept some 500 colonies of bees, produced hundreds of tons of honey, imported Italian bees, manufactured comb foundation, and contributed to the bee-papers of different countries.

Father Langstroth died in 1895, Chas. Dadant in 1902—both at the age of 85. Since they had been joint stars in the apiarian field, it was natural for the American Bee Journal to place their likenesses at its mast-head, where they are still. When leaving the field of bee-publishing, it seemed natural to turn for a successor to the son who had continued the work of the pioneers after their demise.

Mr. C. P. Dadant is well-known to the readers of the American Bee Journal as one of its oldest contributors. They know that he is president of the Illinois State Bee-Keepers' Association, and that he has served at different times as secretary, director, and president, of the National Association. But perhaps only a few know that his writings are not confined to the English language. He has been for years a contributor to European bee-papers in foreign lands — in Paris, Lausanne, Milan, etc. He has again revised the "Hive and Honey-Bee," both English and French editions. This book has had four Russian editions, and is now translated and about to be published in Barcelona, Spain. At my request, he dismantled and rebuilt, with additions and corrections, the "First Lessons in Bee-Keeping," or "Bees and Honey," by Thomas G. Newman, a former editor of the American Bee Journal. Being retired from active apiary practice, Mr. Dadant has enough leisure to give the American Bee Journal his undivided attention, and the benefit of his extensive experience with bees.

While I would like very much to mention all who have aided me in making the American Bee Journal what it has been the past 20 years, space forbids referring to more than two others.

Miss Mattie C. Godfrey, who came to set type on the American Bee Journal in 1883, and who continues with it still, deserves praise for her faithfulness and excellent work during the nearly 30 years of her loyal service. No one could have rendered more efficient and devoted service than has she, and I am glad to make this acknowledgment.

And Dr. C. C. Miller—how can I ever repay him for his fatherly counsel, his sincere and unselfish help to me during the past 20 years? The American Bee Journal would not possibly have been so interesting and valuable in its contents had not Dr. Miller's half-century of bee-keeping and genial good-nature been back of it. He has been ever ready to render any and every assistance possible when called upon. To Dr. Miller I owe more than perhaps to any other man I ever knew, except it be my own father, who passed to his reward some 10 years ago. Bee-keepers do not value Dr. Miller now as they will some day. The present generation is too near to him to get his apiarian proportions in exactness. But some future time will estimate him correctly, and then he will occupy the true position which he has achieved during the many years of his varied labors. He will be 81 years old—no, 81 years young!—next month (June 10)—may he live yet another score of years, to continue his beneficent services to all mankind, and especially to bee-keepers in this and other lands.

Again I thank you, one and all, and wish you happiness and success.

GEORGE W. YORK.

MISCELLANEOUS NEWS ITEMS

California and the National.—As some inquiry has come from the East regarding the action of the California bee-keepers in passing resolutions in different parts of the State, withdrawing from the National Bee-Keepers' Association as a body, I will try to give our reasons so that our friends in other parts of the country will understand that our action is not intended to be permanent or taken with a feeling of hostility.

In the first place, the National deserted us by changing the organization and raising the dues, thus forcing us to change our constitution. We can see no reason for joining the National in a body if by so doing we have no advantage over coming in singly; for that reason we decided to let each one judge for himself; but most of us feel that we need the money in California for this year, more than we do in the East, where we have less recompense and little to say as to the way it is used.

When the Finance Committee reported to the State Association, recommending withdrawal from the National as a body, the action was not taken without opposition. L. L. Andrews, of Corona, and M. H. Mendleson, of Ventura, with some others, protested, but were voted down. The secretary then announced that he would still receive dues for the National and send them on at any time, and the offer still holds good.

The bee-keepers of California are getting acquainted with each other as never before, and the spirit of a strong boost for the good of all is not confined to any one section. Northern, Central and Southern California are finding out that they have a common cause, and that by working together they will be a power for the good of their calling. If all other States would do the same, what could we not do when we joined forces in the National?

Geo. L. Emerson,
Chairman Publication Committee.

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Death of Rietsche.—Mr. Bernard Rietsche, inventor and manufacturer of the Rietsche foundation press, much used in Europe, died January last, aged 56 years, at his home in Biberach, Baden.

◆

Please "Boil it Down."—We like to insert news and information, as well as methods and opinions, from all parts of the country, but please make your communications short and to the point. It is only in this way that a bee-paper can contain matter of interest to all.

◆

The History of Bee-Diseases.—The Department of Agriculture has just published a very exhaustive "Bulletin of Historical Notes on the Causes of Bee-Diseases." It is a very instructive publication, compiled by Messrs. Phillips and White, who both have made a study of foul brood for several years. It concludes with a brief chronological summary.

The Bulletin may be had from the Bureau of Entomology at Washington. It is designated as No. 98.

◆

Bee-Poison—Cure.—In L'Apicoltore for March, Dr. Giuseppe Cicogna gives interesting information on the efficiency of bee-poison for the cure of arthritis. In two very plain cases he effected a cure. The first time, with only two bee-stings, relief was secured within half an hour. In the second case, with a patient confined to his bed, where the slightest movement was painful, six *api-punctures*, repeated for three successive days, secured relief, and entire cure was consummated within 5 days.

◆

Value of Bees as Pollinators.—Having occasion recently to deliver a talk on the relation of bees to horticulture, at the Ontario Agricultural College, Guelph, Canada, we made the statement that bees produce annually $20,000,000 worth of honey; but that their economic importance to the fruit-grower and the consumers of fruit in this country could be measured by five times that in the production of more and better fruit and better crops. After we had concluded our talk we asked the botanist who heard this talk if this statement, in his opinion, was too strong. He very promptly replied that it was not.—*Gleanings in Bee Culture.*

◆

Short Course in Bee-Keeping.—The annual short course in bee-keeping at the Massachusetts Agricultural College is offered from May 29 to June 13, 1912, to be concluded by a convention and Field Day. The course and convention are under the personal direction of Dr. Burton N. Gates, in charge of the apicultural service of the College and State.

The course includes lecture, laboratory, demonstrational, apiary and field work, as well as excursions to large apiaries and queen-rearing plants. The concluding convention should bring together a hundred or more representative apiarists of the East, besides the noted authorities and commercial men who appear on the program.

The features of this convention will be lectures and demonstrations by authorities of National reputation, as well as displays by inventors, manufacturers, supply merchants, and queen-rearers.

A special invitation is extended to all bee-keepers to display and demonstrate inventions, implements or methods. If table space is desired, or special equipment is to be prepared, notice should be sent to Dr. Burton N. Gates (Amherst, Mass.) at least 2 or 3 weeks before the convention. The college will provide covered tables for the exhibit.

It may be found necessary to limit the number of students in the course, yet applications are accepted in the order in which they are received. *No registration fees will be charged.* Women are cordially invited to attend.

Registration with the Extension Service, Massachusetts Agricultural College, Amherst, Mass., is necessary for admission to classes.

CONVENTION PROGRAM.

June 12th—Wednesday.

Morning. 9:00.—Entomology Building. Displays of manufacturers and queen-rearers.

9:15.—Demonstrations: "Improved flexible plate foundation fasteners," Mr. A. H. Byard, of West Chesterfield, N. H.

"The Aspinwall hive." Demonstrator to be announced.

The remainder of the morning will be devoted to an excursion conducted by Director Brooks, of the Experiment Station, for the "inspection of bee-forage crops." Leave Entomology Building at 10. (If possible, the trip will include a visit to a North Amherst pasture, where white clover has been brought in by top dressing.)

Afternoon, 2:00.—Entomology Building. Addresses: "Bees in relation to fruit-culture and plant life," Mr. A. W. Yates, Hartford, Conn.

Subject to be announced, by Mr. R. H. Holmes, of Shoreham, Vt.

Demonstrations: Electric foundation fastener and wire embedder, Mr. H. F. Davis, of Holyoke, Mass.

Inventions: Mr. F. Danzenbaker, of Norfolk, Va.

Adjourn to the apiary. The features of the newly-erected Apiary Building will be explained, including the general work-shop, honey-room, box-extracting room, bee-cellar and equipment.

Demonstrations at apiary: "Queen-rearing, Mr. F. M. Keith, Worcester, Mass. Demonstrational treatment of infectious bee-diseases, State Inspector.

Evening, 7:30.—Clark Hall. Address of Welcome, Pres. K L. Butterfield.

Address: Hon. J. Lewis Ellsworth, Secretary State Board of Agriculture.

Illustrated lecture on "The life, habits, and development of the honey-bee," by Dr. James P. Porter, Dean of Clark College, Worcester.

June 13th—Thursday.

Morning, 9:00.—Entomology Building. Address; "The progress of apiculture in the last two years," by Mr. E. R. Root, editor of Gleanings in Bee Culture, Medina, Ohio.

Subject and speaker to be announced.

A few homely facts—things worth knowing how to do, by Mr. Arthur C. Miller, of Providence, R. I.

Demonstrations: "Electric honey-cutter for sectioning comb honey," by Mr. H F. Davis, of Holyoke.

Demonstrations yet unannounced.

Afternoon, 2:00.—Apiary. Demonstrations: "Production of a swarm artificially," by Mr. E. R. Root.

"Fuller queen-rearing system with completed outfit in operation," by Mr. O. F. Fuller, of Blackstone.

"Shook swarming—a method for the business or professional man," by M. F. Cary, of Lyonsville.

Unannounced demonstrations.

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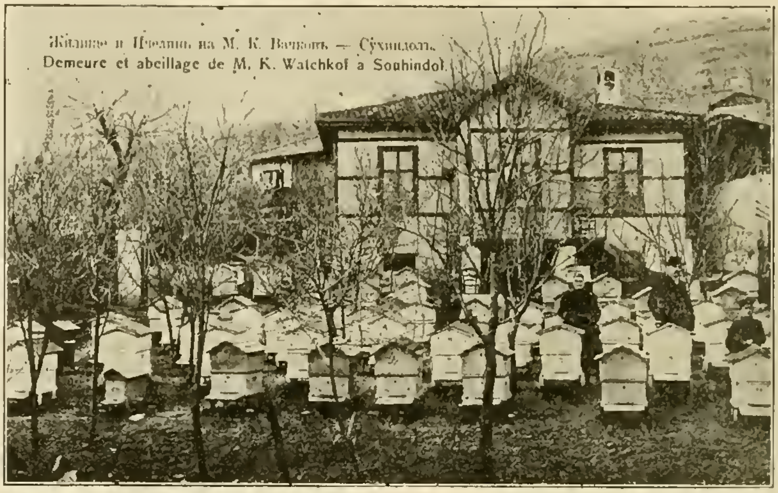

Жилище и Пчелинъ на М. К. Вачковъ — Сухиндолъ.
Demeure et abeillage de M. K. Watchkof a Souhindol.

The Apiary of Mr. Watchkoff, in Bulgaria.

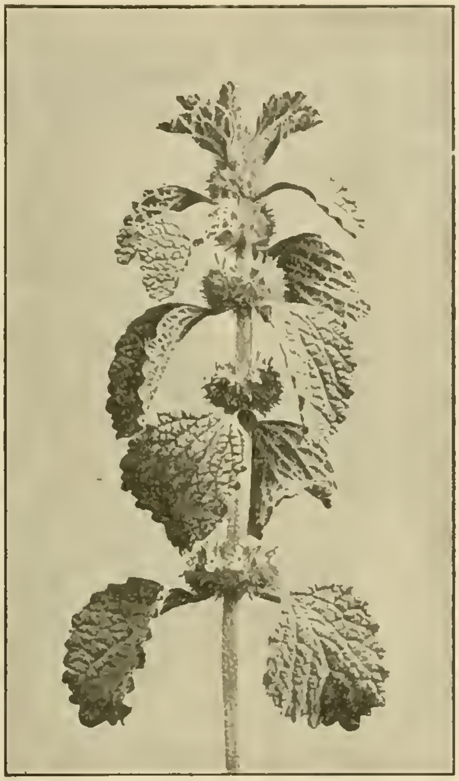
An Apiary in Bulgaria.—The emigrants of South Central Europe, who come to our shores, are contemptuously called "dagos" by most of our people, and regarded with very little consideration, as if they were an inferior race. Originally the descendants of Spaniards in Louisiana were the sole beneficiaries of that elegant name, but now it is applied indiscriminately to Italians, Roumanians, Slavonians, Bulgarians, etc.

It will therefore not be out of place to show that there is progress in other lands than ours. The above picture shows the home and apiary of Mr. Watchkoff, at Souhindol, Bulgaria. This cosy home, at the foot of a steep hill, would do honor to our most progressive States. Let us take the beam out of our eye, so we may see the mote in our neighbor's.

American Medicinal Leaves and Herbs.—This is the title of Bulletin No. 219, Bureau of Plant Industry, United States Department of Agriculture, by Alice Henkel. Three dozen medicinal plants are described, with a beautiful picture of each, a full page being devoted to each plant. Bee-keepers will he specially interested in the uses of 4 of these plants, which are also honey-plants. Their collection and uses are accordingly given:

HOREHOUND.—*Marrubium vulgare L.* Other common names. Houndsbene. marvel, marrube.

The leaves and tops are the parts used in medicine, and are official in the United States Pharmacopœia. These are gathered just before the plant is in flower, the coarse stalks being rejected. They should be carefully dried in the shade. The odor is pleasant, rather aromatic, but diminishes in drying. The taste is bitter and persistent. Horehound at present brings about 1½ to 2 cents a pound.



HOREHOUND (*Marrubium vulgare*), LEAVES, FLOWERS, AND SEED CLUSTERS.

It is well known as a domestic remedy for colds, and is also used in dyspepsia and for expelling worms.

CATNIP.—*Nepeta cataria* L. Other common names.—Cataria. catmint, catwort, catrup, field-mint.

The leaves and flowering tops, which have a strong odor and a bitter taste, are taken when the plant is in flower, and are carefully dried. The coarser stems and branches are rejected. Catnip was official in the United States Pharmacopœia from 1840 to 1880. The price ranges from 3 to 5 cents a pound.

Catnip is used as a mild stimulant and tonic, and as an emmenagogue. It also has a quieting effect on the nervous system.

MOTHERWORT. *Leonurus cardiaca* L. Synonym.—*Cardiaca vulgaris* Moarch. Other common names.—Throwwort, cowthwort, lion's-tail, lion's-ear.

The leaves and flowering tops are collected during the flowering season. They have an aromatic odor and a very bitter taste. At present they bring about 3 to 5 cents a pound.

Motherwort has stimulant, slightly tonic properties, and is used also to promote perspiration.

BONESET.—*Eupatorium perfoliatum* L. Synonym.—*Eupatorium connatum* Michx. Other common names.—Thoroughwort, thorough-stem, thoroughwax, wood boneset, teasel, agueweed, feverwort, sweating-plant, crosswort, vegetable antimony. Indian sage, wild sage, tearal, wild isaac.

The leaves and flowering tops, official in the United States Pharmacopæia, are collected when the plants are in flower, stripped from the stalk and carefully dried. They lose considerable of their weight in drying. The price per pound for boneset is about 2 cents.

Boneset leaves and tops have a bitter, astringent taste and a slightly aromatic odor. They form an old and popular remedy in the treatment of fever and ague, as implied by some of the common names given to the plant. Boneset is also employed in colds, dyspepsia, jaundice, and as a tonic. In large doses it acts as an emetic and cathartic.

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Texas Bee-Keeping Bulletin.—Bulletin No. 142, of Texas Agricultural Experiment Stations is received, entitled, "Practical Information for Beginners in Bee-Keeping," by Wilmon Newell, State Entomologist and Entomologist of the Experiment Stations.

This bulletin ought to do well the work for which it is intended. Texas is doing more than the average State for bee-keeping. As stated in this bulletin:

> By law, the Professor of Entomology at the Agricultural and Mechanical College of Texas is made State Entomologist, and as such, is charged with enforcement of the law for control of diseases of bees, and with maintaining an experimental apiary in which experiments are conducted for the benefit of Texas bee-keepers. Several colonies of pure-bred bees are kept on the A. & M. College grounds for use in connection with a course in bee-keeping given to students in the Agricultural Courses of study, and for demonstration purposes. A more complete apiary, well-equipped with modern tools and implements, is maintained by the present State Entomologist on the Brazos River, about 7 miles from the College. This apiary contains at present 40 colonies, and is used for experimental work exclusively.

The author shows a level head when he speaks thus of the money in bees:

> The profit from keeping bees on a commercial scale is easy to calculate "on paper," but is not always so easy to realize in practice. It not infrequently happens that good colonies, properly cared for, in favorable seasons yield from 40 to 60 pounds of honey, selling at prices varying all the way from 7 to 15 cents per pound. The cash revenue from an apiary under such conditions is of course considerable, but unfavorable seasons, disease, lack of skill or insufficient attention on the part of the bee-keeper may reduce the yield to much less than this amount, or even wipe it out entirely. Experienced bee-keepers have learned that they can not count on handsome profits every season, but find that by judicious management and by caring for their bees in bad as well as in good seasons, they get a good average return from their investments.

It may be of interest to cull a few items here and there from this bulletin.

The egg laid by a queen-bee, usually given as 1/16 of an inch long, is here given more exactly: 1.8 millimeters, or 7/100 of an inch.

Rarely more than 200 or 300 drones are found in a normal colony, and as a usual thing not more than 75 to 100 during summer and autumn. (That 300 would require only about 3 inches square of drone-comb. This is only about one-tenth of the estimates given by nearly all other writers, ancient and modern. We are inclined to believe that the Texas estimate was based upon colonies which had been supplied with full sheets of comb foundation. If we are mistaken we would like to be corrected.)

For Texas, the best hive is the 10-frame dovetailed.

As a great amount of propolis is gathered by the bees in Central and East Texas, the metal-spaced frame is preferable to all others in these localities.

On opening a hive, blow one or two puffs into the entrance. "Do this with a strong closing of the bellows, so as to drive the smoke thoroughly into every part of the hive. This does not mean that the bees should be deluged with smoke. All that is required is that each bee in the hive should get a whiff, however light it may be."

As to the effect of smoke upon bees:

> The probable explanation is simple. All wild creatures are afraid of fire and the bees, not unlike other creatures, have learned by generations of experience that fire is a force which they can not hope to combat successfully. As smoke is the forerunner of the fire, they doubtless conclude that it is better to load up with their household supplies of honey and prepare to vacate than to attempt opposition to the smoker and its operator.

(Didn't Prof. Newell accept that tradition without much studying over it?

When bees have any experience with fire, isn't that the end of the bees ? and how much would their descendants (?) remember about it ?)

The cappings from 1500 pounds of extracted honey yielded 15½ pounds of choice yellow beeswax.

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"First Lessons in Bee-Keeping."—In a kindly notice of this work, the Irish Bee Journal says:

> "In many respects it approximates so closely to the teaching with which we are familiar in these countries that, making allowance for the difference in size and make of American hives and appliances, this handbook might serve a useful purpose in the hands of beginners over here........The book is liberally illustrated, well turned out, and inexpensive. We should expect it to reach a large circulation in the land of its birth."

◆

Colorado Convention.—The spring meeting of the Colorado State Bee-Keepers' Association will be held in Montrose, Colo., Friday and Saturday, May 10 and 11, 1912. The Montrose County Bee-Keepers' Association will be the host of the State Association. It is desired that every bee-keeper on the eastern side of the mountains take the trip to Montrose and see this country. Homeseekers' rates will apply on the Denver & Rio Grande railroad from Denver, Colorado Springs, and Pueblo. These rates are good for 30 days. I would suggest that the way to go is via Marshall Pass, and return by way of Grand Junction over Tennessee Pass. More of the country can be seen this way.

The Western Slope bee-keepers in Montezuma, La Plata, Montrose, Delta, Mesa and Garfield counties are urged to turn out in full force. This will be a live meeting, and you will regret it if you do not attend. WESLEY FOSTER.

Boulder, Colo.

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Commissioner Albert J. Cook.—The man who has been known so long and so lovingly among bee-keepers as Prof. Cook, is no longer to be known merely under that title. It seems that out in California they have for governor a man of discernment, who knows a good thing when he sees it, and when Gov. Johnson wanted to find a man to fill a position that he says is "one of the most important offices in the State," it is nothing strange that his glance should fall upon our old friend, and that he should say, "There's the very man to fill the office of Commissioner of Horticulture, with the responsibility of appointing capable men as assistants, and disposing each year of the serious amount of $100,000 in carrying out the work of his department." Safe to say, there will be no misappropriation of funds, but every cent of that one hundred thousand will be placed where it will do the most good, not to Prof. Cook—beg pardon, Commissioner Cook—but to the people of California.

There is little danger that all interest in bees will die out of the heart of a man who had so great love for them, and in his new position it is entirely within the possibilities that opportunities may arise to do many a good turn for California bee-keepers, if not for the bee-keepers of the world. Blessings on his head!

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Trouble With Mice—Alsike Clover

We put our bees in winter quarters late in December (they kept flying around until that time), and today they had their first cleansing flight. We examined them all, and found 3 colonies out of 12 alive. We will have plenty of honey from the other hives to feed the 3. We found 2 large mice, which had their nest made from the packing in a super. (I wonder if Dr. Miller would answer "I don't know" if one should ask him how a giant mouse can pass through a regular opening in a Langstroth hive.) Tiny cockroaches were in evidence, also.

We have heard that white animals, and animals with white feet, become sick while on alsike clover pasture. I asked a farmer, who called here, how it happened to make white animals sick, and not those of other colors, and he said that bees work on alsike clover, and when the animals approach the bees they sting them, causing their flesh to swell, and they become very sick. He said he had a nice colt get very sick, and he called in a veterinary surgeon, who asked what kind of pasture it was on. When he said alsike clover, he gave the above explanation. Perhaps you knew about it before now. It is much to be regretted, for the most beautiful honey I ever had was gathered from alsike clover, I think.

One summer I took honey to town, and watched the clerk remove it from the crate—19½ pounds in 18 sections—the most beautiful honey I ever saw. He asked me if I fed the bees? (We had been taking sacks of granulated sugar in exchange for part of our honey.) As I was leaving the grocery the owner said, "I want you to tell me how the bees *make* that nice honey." I answered, "I do not know. Why? Isn't all the honey you get like that?" He said, "I guess not." "Well, I can not tell you unless the bees get it from an alsike clover field about one-half mile from them." There is little alsike and alfalfa near here. (MRS.) IDA KITT.

Albion, Ind., March 18.

To have only 3 colonies left out of 12 is rather discouraging. But you probably have plenty of company if there is any comfort in that. A day or two ago a report came of one apiary of 75 colonies, and they were all dead. At any rate, you will have the fun of building up again and getting those 9 empty hives filled with bees. Be sure not to let those empty combs become victims of the bee-moth.

Dr. Miller, upon being asked how a giant mouse can pass through a regular opening in a Langstroth hive said, "I don't know whether there ought to be any difficulty in the case or not, for I don't know the size of the opening. It may be anywhere from ⅜ to ¾ inch in height. Anyway, it must be remembered that the head is about all there is of a mouse so far as getting through a crack is concerned, for once it gets its head through, the rest of its body can be flattened out so as to go through easily."

Right here it may be no harm to tell you a little secret, if you cross your heart not to tell. That is, that Dr. Miller is always ready to help answer any question that comes in this department. Indeed, the probability is that if there is any difference, he gives a little more attention to them than he does to questions in his own department, for he is old fashioned enough to believe in the motto, "Ladies first."

With regard to bees stinging animals with white feet, it may be a pretty safe guess to say that the whole thing is a mistake. In the first place, it is generally believed that the bees are more likely to sting anything dark than light. In the second place, no bee at work upon flowers will ever volunteer an attack. The only way you could get such a bee to sting a horse's foot would be to catch the bee and hold it against the foot. So I believe the whole thing is a myth.

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Swarming—Prevention Not Cure

One's pleasure in life comes largely from the degree of success he has with his efforts. I wanted to play with bees, and my aim was to have the super well filled with honey, but swarming was the result. I gave the bees shade from the hot sun, air by raising the hive, but the description following shows the sequel. In the autumn I put them up as carefully as I could, from the reading I had done. They are in Norfolk, Conn., which is 1400 feet above sea level, and we have a short season, and if I have any bees alive when I take them out of winter quarters, I propose to feed them.

Here is the story of the bees:

May 9th.—One colony of Italian bees with a clipped queen arrived at 2 p.m. from Philadelphia by express. They were carried to an empty barn near the orchard and put into a dark room; at 5 o'clock the wire-netting was taken off, cover and bottom board adjusted, and they were carried to the orchard. As there seemed to be absolutely nothing for them to feed on, as almost nothing was in leaf, I used an Alexander feeder and gave them daily a cupful of syrup of granulated sugar, one to three, until the apple-trees began to bud.

May 22d—When the blossoms began to drop, and the trees had to be sprayed, I brought them to my house about half a mile away. The process of moving was rather bungled, so it was impossible to place them that night where they were to remain, and the hive was put into the garage and left until the next night, when they were put in their proper place. The super was put on soon after.

June 18th.—The bees swarmed. I looked in vain on the grass and everywhere for the clipped queen; in a little while the swarm went back to the hive. I took off the cover and began looking for the queen; on the fourth frame I found her. I took that frame with her on it, and 3 other frames full of bees and put them into the hive about 30 feet away. I put 4 fresh foundation frames in the old hive. Everything went along very quietly until June 27th, when a swarm came out of hive No. 2, in which was the clipped queen. That swarm I hived in the normal way by shaking it into a sheet in front of the hive. After dark I moved it on to its stand.

July 3d.—A small swarm came from hive No. 2, but it got away before I had time to get it; of course, the clipped queen did not fly away with it.

July 12th.—There were so many bees hanging on the outside of hive No. 2, that I went through the 10 frames to see if I could find the clipped queen, or any other. I couldn't, perhaps because it was my first attempt, but I cut out everything that looked like a queen-cell, and shook the bees off of 3 frames before the parent hive—as I thought that the weaker colony—I didn't know whether there was a queen on them or not, but I wanted to relieve the congestion. I think they stayed there; at any rate, there were not so many on the outside of No. 2 after that, and I saw no swarming from No. 1.

July 17th.—I put supers on No. 3 hive, although I couldn't see where the bees were going to get the material to build out their 10 foundation brood-frames and their super foundation.

Aug. 15th.—No. 2 swarmed again, small swarm, and they went off.

Aug. 18th.—The same colony swarmed again, but they went back.

Aug. 21st.—The bees tried to swarm again.

Aug. 25th.—The bees went out to a maple tree, but went back to the hive again No. 2 hive). It was raining most of the day.

Sept. 1st.—Two swarms came out of No. 2 hive, one small and the other good size. They were on low bushes, and I dumped them into two boxes. They stayed there till Sept 5th, when I tried to put them back, some into each hive.

Sept. 6th.—The bees that I dumped into hive No. 2 went off, but I had no reason to think that those I put into the other two hives did not remain, the bottoms looked fuller.

Sept. 13th.—Took super off the parent hive. Only 3 divisions were entirely capped. The outside frames were not more than half filled out, and with very little honey.

Sept. 20th.—I had been away for 5 days, and the night I returned I found the front of the parent hive, from which I had taken the supers on the 13th, covered thick with bees. I didn't know whether it meant another swarm or not, but I smoked them all back into the hive. The next night there were not so many, but I repeated the process. The third night there were still fewer, and I did nothing to them.

Oct. 2d. Took super off of No. 2 hive. There were more sections filled than from No. 1 hive.

Oct. 8th.—Looked the 3 hives through. No. 3 hive, which had had some feeding for 10 days, one to 8 Alexander feeders, showed some brood just laid, and I think enough sealed honey for the winter. No. 2 hive had food enough, a little uncapped, but no brood. No. 1 no brood. This was the hive into which I put 4 frames of fresh foundation. One frame on the outside was filled with perfectly clear, beautiful honey, but I left it for them. I found no brood, but I didn't look entirely through, for they began stinging me through my gloves. I had killed some drones in the hive, examined previously to this, and I wonder if that made them ugly.

Oct. 14th.—Looked in No. 3 hive to see how the eggs looked that I found.

Oct. 18th—On Oct. 8th I couldn't see that they had developed at all. Then I put them into winter quarters, one hive into a dark room in the stable. The hive stands to one side of a south window, on a shelf, and I have made a run to a half inch opening at the bottom of the window. The hive is tied up with a blanket. The other 2 hives have winter-cases over them, and are put into a rain-tight long box. The hives stand 4 feet apart, 6 inches back from the front of the box with a run to the open; the box stands a foot from the ground. The frost is likely to go 3 feet deep. MRS. CHARLES A. SPOFFORD.

New York, March 19.

Surely, you had your own time with swarming. Please do not, however, expect an infallible rule for the prevention of swarming, but you may, at least, be told some things that will help you to avoid such swarming by the wholesale in the future. Let us follow up seriatim your story so interestingly told.

You did well to give the bees shade and air. But it was not so well that you moved them half a mile May 22, at a time when they had been working busily on fruit-bloom; for being moved so short a distance, too many bees would return to their old location to be lost or to join some colony near there. "The process of moving was rather bungled." Likely that was good rather than bad; helping to make the bees mark their new locality. At any rate, the bees built up pretty well, or they would not have swarmed June 18. Nothing abnormal about their swarming at that time.

When the bees swarmed June 18, you put a lot of the bees into hive No. 2, together with the queen and 4 frames of brood. That was a bad move. Right then and there was your chance to take such steps with the bees as might have put a stop to the foolishness of any more swarming. You should have put only one frame in No. 2 with the queen, preferably one of the poorer frames of brood. Be sure to do that the next time you are placed under the same circumstances. Then set No. 2 on the old stand in place of No. 1, and set No. 1 close beside No. 2 (no matter at which side), both hives facing the same way. A week later take No. 1 away and set it on a new stand, little matter where, so it is 8 feet or more from the old stand. That's all; the bees will do the rest.

Perhaps, however, you may be interested to know something about what the bees will do. After the first move most of the bees will be in No. 2 with the queen, while in No. 1 is the brood from which young bees are constantly emerging. If you leave things without further change, you may count pretty surely on a swarm issuing from No. 1 as soon as the oldest young queen is ready to go with it. But when you move No. 1 to a new stand, especially if you do this in the middle of the day or after it, while the young bees are having a playspell, all the field-bees that leave No. 1 that day, and for a day or two afterward, instead of returning to No. 1 will go back to the old place and join No. 2. This will so discourage No. 1 that the oldest virgin will be allowed to destroy all the rest, and there will be no further swarming. No. 2 having received all the bees of the swarm, and a lot of fielders beside, will be in fine condition to store a lot of honey in the supers if there is any honey to store, with no thought of any swarming. If your bees are at all reasonable bees you may count pretty safely on their carrying out this program.

Far Western Bee-Keeping

Conducted by WESLEY FOSTER, Boulder, Colo.

Pueblo County Bee-Keeping

Pueblo county is not an agricultural looking county. The waste land and unirrigated range predominate over the irrigated land to such an extent that most folks would say that for farming the county is no good. But where irrigation is practiced alfalfa will grow luxuriantly, and sweet clover lines the ditch banks. There are at the present time perhaps 100 bee-keepers in Pueblo county, with perhaps 3000 colonies of bees. This is not half the bees that were in the county 10 years ago, and not a quarter the number of colonies which could be kept. American foul brood—which happens to be the only kind we have in Colorado, the European variety having not yet made its appearance—is the principal cause of this loss in bees. Pueblo is the second largest city in Colorado, with about 80,000 people, and, of course, the city controls the county. With a condition of this kind, the country questions will be the last to be settled. It is hard to convince the county officers of the needs of the country bee-keeper, if the officers are not directly in contact with rural conditions.

The Arkansas river runs from the western border of the county to the eastern, a distance of about 50 miles, through the center of the county, and the county is 50 miles wide from north to south, so that with a county of this size, if there is much uncultivated land, the county may be of considerable importance from a honey-producing point of view.

The city of Pueblo lies nearly in the center of the county, with the honey-producing territory branching out in five different directions, and following in the main the irrigated valleys. To the west of town, up the valley of the Arkansas, is Swallows and Beaver, near the Fremont county line; to the north of Pueblo lies the Fountain valley through which flows the Fountain river or creek from the foot of Pike's Peak. Fountain creek flows into the Arkansas river at Pueblo. Quite a little farming is done with the help of the water from this stream, and Eden, the first station north of Pueblo in this valley, would suggest that it was a very fruitful section.

To the east of Pueblo, down the Arkansas valley, is the best honey-district, because it is the most extensively farmed. Avondale, Nyburg, Boone, and Nepesta, are all surrounded by farming lands, and bees thrive on the alfalfa, sweet clover and cleome. Cleome is more plentiful in the Arkansas valley than in any other section of Colorado. Mr. H. A. Danielson, with about 200 colonies, is located at Avondale. Harvey Said, who lives in Pueblo, and carried off first prize at the State Fair on extracted honey, has bees near Avondale. Mr. Said placed the glass jars containing the honey in the sun during the warm part of the day for about a week before taking to the fair, and these jars had not begun to show any signs of granulation three months after bottling, while a jar of the same honey not exposed to the sun's rays was white and solid. This honey of Mr. Said's was the whitest honey I think it has been my privilege to see.

Mr. O. L. Reed lives about 7 miles east of Pueblo, and was formerly county bee-inspector; he now has but a few bees, giving most of his attention to raising celery and cauliflower, which he ships as far as Kansas City and Omaha. He raises from 1000 to 1800 dozen bunches of celery to the acre, and it brings him from 35 to 55 cents a dozen bunches, so you see each acre brings in quite an income. He says he can raise celery and put it on the cars at $100 per acre. Mr. Reed will have several acres of celery the coming year, and will also raise considerable cauliflower. He has a boy growing up of whom, he says, he is going to make a bee-keeper. He is planning to build his apiary up to 100 or 200 colonies for the boy to keep. Mr. Reed hires men only, saying boys are unsatisfactory, not meaning his own. He has no use for chickens, saying that no man who figures his time worth anything will spend much time with them. He says, for the time and money invested, *his bees pay better than anything else on his place*. He has 17 acres, and is building new buildings entirely of concrete.

To the southwest of Pueblo, up near the Greenhorn Mountains, a good many bees are kept. Rye, Crow, Abbey, Beulah, Siloam, and Greenhorn, are the post-offices; none of them, however, on any railroad, so this section of the county is hard of access.

A meeting of the bee-men of Pueblo county was held Feb. 29th, and while only 8 were present (not counting myself), petitions were taken away for the securing of signatures of bee-keepers, asking the County Commissioners to set aside a fund sufficient to pay for adequate inspection of bees. The prospects are good for getting something done, as the work has been entirely neglected for the last few years.

The meeting was held in the club rooms of the Pueblo Commerce Club, and the cordiality of the Club was greatly appreciated by all the bee-men present. It is probable that a county bee-keepers' society will be formed, and if this is done the campaign against foul brood can be more effectually waged.

The county organization is a need in many counties in Colorado, and it is possible to keep up interest if meetings are not held too often, and are held at convenient times.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Those Divisible Brood-Chamber Hives

Dr. C. C. Miller tries to give the writer a "swat," on page 102, in regard to the divisible brood-chamber hive used by us. He quotes Mr. Samuel Simmins as advocating a hive with frames ⅞ inches deeper than the shallow Langstroth, and places the writer on the opposite side as claiming that the depth should be 3¾ inches shallower than the Langstroth. I wonder what some of our most able and oldest experienced persons must be thinking when they draw the conclusion that we advocate such a shallow hive. The truth of the matter is that we advocate, and have been advocating for more than 15 years, a *deeper* hive than the Langstroth, and the way we obtain this depth is by using two shallow hive-bodies for each brood-chamber. This makes a still deeper hive than that advocated by Mr. Simmins, the British authority.

In other words, it gives us the same depth as the deep hives used by the Dadants, quoted by Dr. Miller, or the same as the "jumbo" hive with very deep frames, about which there was such a commotion a number of years ago. We have tried these deep-frame hives thoroughly, and found the objections that we attributed to the Langstroth depth of hives to be still greater. In other words, the trouble of having a solid rim of stores next to the top-bars, and above the brood, increases with increased depth of the brood-combs.

An advantage of the deeper combs, however, is that the brood-rearing may be increased over that in the shallow Langstroth frames, since the comb surface is so much larger and the brood-nest is not so easily crowded as with the Langstroth hive. Keeping these matters in view when looking about for a change in hive construction or manipulations by which an increased amount of brood-chamber room could be obtained, while at the same time the objections to the rim of solid stores above the brood-nest proper would be eliminated, aided materially in the selection of the divisible brood-chamber hives.

The solid stores above the brood-nest are a detriment, in that bees, as a rule, are loathe to store above such stores, and hence are kept from doing satisfactory work in the supers. Instead of working in the latter they persist in adding to the already detrimental stores in the brood-combs, and crowd out the queen for want of laying room. The result is apparent—slow and retarded work in the supers, and a decreased amount of brood-rearing and a consequent weakening of the forces of the colonies. While the deeper hives, such as used by the Dadants for example, give stronger colonies of bees than the shallow Langstroth, on account of the greater comb surface; the super work is less satisfactory since more honey is stored in the upper part of the deep brood-combs.

It is perhaps well for us to call attention to the matter of locality, and the extent to which locality plays a part in various ways. Dr. Miller, it seems, has overlooked this matter in arguing that there is no rim of honey to bother later in the brood-rearing season, as the bees use up the honey clear up to the top-bar and fill the cells with brood. He further attributes the cause of the rim of honey perhaps to poor queens, or possibly to differences of climate, pasturage, and the seasons; however, not putting as much stress on these causes as he might. His suspicions that the combs in the deeper frames of the Langstroth hives had more to do with it, is not a strong argument in the premises, since we have had very little trouble from sagged foundation near the top-bars. In the first place, we used a heavy enough grade of foundation with proper wiring in most cases, and in addition to this, diagonal wiring with the horizontal wires aided materially in preventing such sagging. The same rim of honey existed in the most perfect combs.

We are sure that locality has more to do with it, especially as regards the character of the honey-flows. While Dr. Miller's bees may use up all the honey in brood-rearing in the spring, the general rule in our own locality is that a little more new honey is brought into the hive daily than is used by the bees. This honey is stored as close to the brood as possible in the upper part of the combs, and gives the trouble mentioned. We presume that this will be experienced in all localities where there is a long, slow and steady honey-yield in the early part of the season, such as we have here, and in such, like ours, the question of how best to remove this honey is an important one.

The old way was removing it by the use of the honey-extractor, but this has long been found impracticable by the writer, besides being a disagreeable job; and the result, a product of extracted honey not very palatable, owing to the presence of unsealed brood of various stages in the combs. By means of the divisible brood-chamber hive, however, it takes but a moment to place the upper shallow story below the lower one and let the bees move the honey. It not only serves this purpose, but the handling of the honey by the bees stimulates the colony to further brood-rearing, and creates more laying room for the queen. This, done just before giving the supers above, puts the colonies in the best possible condition to force them into the supers with a vim and vigor not possessed by colonies left alone, and simply having the super placed on their brood-chamber.

The same kind of an exchange of stories as mentioned before, just previous to the swarming season, will prolong the desire to swarm considerably. If the colony has had time to rearrange the brood-nest after such a change long enough before the swarming season is over, there is still a possible chance of their swarming. The addition of a shallow story of extracting combs or foundation, by slipping it *between* the two stories of the brood-chamber, will "knock swarming in the head" more effectively than any method that we have practised. The upper story, in this case, will now become a shallow extracting super as the brood is crowded out, and as the honey-flow opens, the comb-honey supers are given underneath this. This is the most ideal way of procedure to secure the best possible work in the supers immediately, and to produce a maximum amount of surplus honey from a good colony of bees.

We see how the shallow stories of

the brood-chamber are interchanged from one part of the hive to another, not only in the brood-chamber, but up into the supers as well. This shows the great importance of having these all alike and interchangeable to give the best results. It is for this reason that we have been most successful with the divisible brood-chamber hives, and on this account have not hesitated to recommend them to others from time to time. Dr. Miller has asked us to play fair, and asks what under the sun the advantage of shallow supers has to do with the question of the advantages of the divisible brood-chamber hives. Our answer is, that if shallow supers have advantages over deep ones, which is granted to a certain extent, and we can use these same shallow supers interchangeably in the brood-chambers as we do, it makes it the more important to adopt them. Or, in other words, if the shallow supers are valuable features in the divisible brood-chamber hive, and the same—as shallow supers—have advantages over deep ones, there should be no question about their superiority.

We wish to mention in conclusion that we do not attribute our greater success to the mere fact that we have thrown our whole energy into using the divisible hives without trying out the Langstroth size just as thoroughly. From Dr. Miller's statement, "that it is not entirely fair to compare the inexperienced young Scholl with the Scholl of mature years and brilliant energy," it may be taken that we were young and inexperienced when we tried the Langstroth hives in our earlier bee-keeping, while we are using the divisible brood-chamber hive now, with our experience of knowing how to use them, and, for that reason, a comparison would not be a fair one. However, this is not the case, for as a young, inexperienced person, we gave not only the Langstroth but other hives a thorough trial side by side with the divisible brood-chamber hive, and we are doing this today, with our advanced years and experience. That is to say, we have now hundreds of Langstroth hives in use in a large number of apiaries together with the divisible brood-chamber hives in the same yards. The longer we handle the two different kinds, however, the more we learn to appreciate the advantages we enjoy by using the divisible brood-chamber hives in connection with shallow supers, both for comb and extracted honey.

As a result, the number of colonies in the divisible brood-chambers is annually increasing, and will continue to increase, as all the new hives purchased for the last number of years have been nothing else but the divisible brood-chambers, or the shallow supers.

We realize that an effort to completely cover all the points for which we have been put to task, would require more time and study. This we have not at our disposal, however, in spite of the fact that we are enabled to accomplish more with the divisible brood-chamber hives by saving a lot of time otherwise necessitated by a large number of extra manipulations necessary with deeper hives and supers.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Obituary S. T. Pettit, D. Chalmers, Mrs. Haberer

The grim reaper has been busy lately among Ontario bee-keepers, and two of our well-known men have been called away, Mr. S. T. Pettit, father of our Provincial Apiarist, and Mr. David Chalmers, one of our inspectors of apiaries. Mr. Pettit was 83 years old, and as his health has been poor for some time, in a measure his death was not unexpected. He was very prominent among the older bee-keepers of Ontario, and although the writer never had the privilege of meeting him personally, owing to the fact that Mr. Pettit quit attending the conventions just about the time I started, yet for the past few years he has corresponded regularly with me at times, and the interest shown in my work, by him, was to me a source of great pleasure, as Mr. Pettit was one of those earnest Christian men whom it is a privilege to have as a friend. He was an expert bee-keeper, and of quite an inventive turn of mind, always striving to find out what was the best in the way of things pertaining to bee-keeping, and in all his experiments he was ever eager to give others the benefit of his discoveries.

Mr. Chalmers was also well known, and as he was in just the prime of life, in so far as one could judge by appearances, needless to say the report of his death came as a great shock to all of his friends. An expert bee-keeper, a good inspector, as well as a frequent contributor to the Canadian Bee Journal, he will indeed be missed—especially when his place is vacant at the next convention of the Ontario Association—as friend Chalmers has been a regular attendant at that gathering for a number of years.

We have also just learned of the death of Mrs. Haberer, wife of Jacob Haberer, one of the directors of the Ontario Bee-Keepers' Association. It has been my pleasure to meet Mrs. Haberer a few times, and her kindly German manner towards the writer, when I first met her at the Detroit convention, is still remembered with pleasure. Mr. Haberer and family, as well as the relatives of both Mr. Pettit and Mr. Chalmers, will have the sincere sympathy of a host of Canadian bee-keepers.

Praise for Carniolans—Do They Resist Foul Brood?

Editor Root, in a recent issue of Gleanings in Bee Culture, says that the yellow Italians have not wintered as well as the darker strains commonly called leather colored. This, I believe, has been the general experience of most bee-keepers here in Ontario, in so far as outside wintering is concerned—for cellar wintering I have not heard of so much difference. And let me say right here again, that the Carniolans are just as much ahead of *any* kind of Italians as the dark strains of this race are ahead of the Goldens in the matter of hardiness. I know many will say that they have no trouble wintering Italians in our severe climate, but under conditions where the Italians winter *well* the Carniolans will winter *better*, and under conditions where most Italians are liable to perish, Carniolans will generally come through all right, and surprise you by their rapid building up in the spring, even if they have been badly depopulated during the winter by not being properly cared for. No, I have no queens for sale, and hold no brief for any Carniolan breeder, yet, today, I am more than ever of the opinion that the Carniolan is the best all-around bee for our northern climate.

One factor alone has led me to do a lot of Italianizing lately, and that is because I am *not sure* that the Carniolans are as good at resisting black brood (European foul brood) as are the Italians, and as we are expecting an attack of this at any time, naturally we have been taking the advice of friends as to the advisability of getting more Italian stock. At the same time, a number who have had the disease in their apiaries, tell me that they fought it successfully with Carniolans, and justly think it is a libel on this race to say they are not as good as the Italians in this respect. Can any one in New York, or other States, give *positive* proof that the Carniolans will not "stand up" against European foul brood? I have had no experience in my own yards with this disease, and the question is asked in all good faith. Personally, I have always found the Carniolans as good larvæ feeders as the Italians, and much better than the blacks. As they are prolific breeders, under adverse circumstances, I can not understand *why* they should not be as good as the Italians in fighting the disease.

I have been told, in a casual way, that the Italians were better to clean up the disease than the Carniolans, but in so far as I can remember, no one has ever given a specific case to prove the point. If any one has the information, the writer at least will be pleased to have the light turned on for his benefit, as well as for others who may be halting between two opinions.

Conditions in Ontario

From reports of wintering received to date, I judge that there will be no very heavy loss of bees in Ontario, wherever the bees were well protected. In our own yards the loss is practically limited to the home apiary, where a number of colonies were wintered in a specially prepared hive with no packing except heavy paper at ends and sides of the hive—abundance of packing over the frames. Today I received a short note from the friend who took out the bees at the east yard (200 miles away) for me. He says the bees were in fine shape, and not a spot on the 275 hives. They were put in the cellar on Nov. 7th, and taken out April 17th, having been wintered in caves that I described in these columns nearly a year ago. The bees in the yards here at home were nearly all wintered on the summer stands, and as the total loss to date is about 6 percent, counting both the east yard and those at home, it can be easily seen that outside of the home apiary referred to, the loss is about *nil*. What little clover we have has wintered well, so perhaps we may get a little honey after all. By the way, the clover scarcity is just local, and in many sections of Ontario the prospects are good for a crop, if conditions as to weather, etc., prove favorable.

The first pollen came in very small quantities on April 16th—gathered from cedars and black alder. While this is late, yet it is not a record breaker, as some odd years it has been a week later than the date given. I have been associated with bees all my life, more or less, yet it was not known to me till a few years ago that cedar yields pollen for the bees. The pollen is of a dull color, and as the bees generally carry small loads of it, unless a close watch is made it is hard to notice. However, if you happen to have a few cedar trees near the apiary, and on some nice, warm day in early spring you hear the roar of the bees, a visit to the trees will soon show you that there is pollen being gathered.

With the gradual clearing away of all our forests, especially those around the home apiary, early pollen yielders are getting scarce. Formerly we had lots of soft maple, black alder, etc., but now hardly anything in that line. As a result, little pollen is gathered now before soft elm comes into bloom—there are still quite a few of these trees as well as some hard maples, another good source of pollen. After dandelions come along there is no lack of pollen, but the early yielders are missed very much, as my other apiaries, in more favored sections, in so far as pollen is concerned, always build up faster than the home bees. In establishing any future out-yards, this question of early pollen and honey yielders, is one of the first questions that we shall take into consideration, as natural forage of that nature is away ahead of any artificial stimulation.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

A Favor—To Facilitate Replies

Like all other extensive bee-keepers, I am greatly rushed at certain times of the year, and during those times I can not give my correspondence as much attention as I should. I hate to show any degree of neglect to any fellow bee-keeper who may write to me for information personally, and I ask all those who may write me for personal information to enclose a stamped self-addressed envelope, and write only on every other line, so I can give the replies on the blank lines. If this is done, I can make better time at my desk, and reply more fully than I otherwise could. I am sure the bee-keepers and interested friends will help me out in this pleasant task, which, at times, is too great a burden.

It Paid Me Well

Some years ago, I had the opportunity to employ, for a few months, an old veteran bee-keeper and queen-breeder at a very reasonable salary, and I did so with the result that I have been receiving good returns from the few dollars thus invested, each season ever since. I furnished him a smoker, veil, pony and saddle, good stock from which to rear queens, and boarded him. I made a trip with him around to the apiaries in order to teach him the way, then I turned the job over to him, and told him to "roll up his sleeves and go at it," which he did, and gave me several months of faithful service.

He was to requeen some of the apiaries with Italian stock, some with Caucasian; and one yard of blacks he was to requeen with the same stock.

At this apiary he made his nearest failure, claiming that he could not get good queen-cells built, and that a large number of queens were lost during the time of mating. At the Italian apiaries he met with success in all but pure mating. At the Caucasian apiaries he met with all-around success, and the stock is still good; not much requeening has been necessary.

The Italians kept failing in color, and finally I put in some Caucasian stock with them, and the combination has made a powerful strain of bees. I introduced Caucasian blood among the black stock, and it has long since changed it, and if there is any trace of the black stock among them I can not detect it. But the Caucasian stock has not absorbed the Italians anywhere. Instead, the two races seem to be about on an equality even after years of contact, and have made a far better strain of bees than either race could have ever been alone.

The question of all questions among Dixie bee-keepers today is, "Will it pay to requeen (or hire it done) all colonies of bees with better stock?" A thousand times *yes*. It will start a constant swell in your bank account that will last throughout your bee-keeping career.

I am going to rear 1000 queens from my best stock, and set them at the head of a lot of nuclei, which I expect to make before the end of the season, or requeen some inferior stock with them.

No Queens for Sale

Since I have given the Caucasian bees a thorough test, and have found them superior to other races as best all-around bees for wholesale honey-production, and have had considerable to say relative to their superior qualities from time to time, bee-keepers have written to me about buying queens of this variety. Being somewhat under obligations to help distribute the stock, I booked and filled orders for several hundred queens each season. But now, making the increase that I am planning, and needing the queens for this as badly as I do, I have no more to offer. I have had to return a large number of orders with the money to those who wanted to give them a trial. So I take this occasion to notify the bee-keepers that I am entirely out of the business.

The Movable-Frame Hive

Mr. Wilder:—I wish you would give us some particulars about the movable-frame hive. I have a few colonies of bees and the worms are very bad in them.

Casseta, Tex. W. A. Wilson.

The advantages or merits of the modern movable-frame hive can not be brought before our less advanced bee-keepers too often nor too plainly. The modern movable-frame hive is constructed with frames for each bottom story, which are accurately cut out and put together, being down in the hive-body, supported at each end by strips of tin nailed in the rabbets made in the ends of the hive-bodies. This allows the frames to hang freely. To remove them, or lift them out, after bees have occupied them, is easy and interesting, for the combs are straight and snug in the frames, if the comb foundation starters, which are usually sent out with the hives, have been fastened to the top-bars of the frames properly. The bars have two grooves in them, the strips of foundation is inserted in one and a wedge in the other.

Comb foundation is made of thin sheets of compressed beeswax, with the imprint of hexagonal cells in which the bees rear their young and store their honey.

The body of the modern movable-frame hive is simply a 4-cornered box accurately constructed, with bottom and cover removable. Bees are far more inclined to store honey in the upper part of their quarters than in the lower. So the hive is constructed with another section or department called the super or top story, which is placed on top of the first section, or brood-chamber as it is called, at the approach of each honey flow. Supers are variously constructed. For comb honey, one pound blocks (sections) are used; for chunk honey, shallow frames; for extracted honey, shallow or deep frames. These various styles are for the convenience of the bee-keeper and the demands of his honey market.

To visit a colony of bees snug in their living quarters (bottom story), with their comb built straight in the loose-hanging frames, smoke them a little, remove the cover, smoke a little bit more, remove the division-board, and lift out the frame of comb next to it. Look it over carefully and set it down gently beside the hive. Lift out the next frame, look it over well, and set it back in the hive for there will be ample room for it after the division-board and one frame have been removed—remove another frame and look over it likewise, and so on until all have been examined; push them up together and set the other frame and division-board back in the hive. Put the cover on, then step back and tell us what you have seen. Well, you have seen about every bee in the colony. Yes, and the queen (the majesty of the colony), too; all the honey they had stored; all the young bees they were rearing in all stages of development. In fact, you have seen every particle of comb surface on which they work. And it is a wonder how those little insects live; so much like many of us, all for the future.

"Worms" do not prey on bees in modern hives unless they are greatly neglected, and have become queenless; but log-gums, box-hives, dry-goods boxes, kegs and barrels, or other crude receptacles, do not permit manipulations, queen-rearing, hive control, and are common dwelling places of the "worms."

A Noted Visitor

Mr. George S. Demuth, of the Bureau of Entomology, Washington, D. C., acting under Dr. Phillips, made a tour through Dixie last month (March) in the interest of bee-keeping. He was well equipped for the tour, and with note-book in hand he gathered and noted information as he went.

The weather was ideal for apiary work at the time; he took an active part with the bee-keepers, and gave out much practical information. Our Government is taking a great stand for the betterment of bee-keeping, by the wide distribution of literature on bee-culture, and the sending of men to the field of activity. Our industry has already received a great help through this source, and far greater results are sure to follow during the next few years.

CONTRIBUTED ARTICLES~

Do Bees Know Their Master?—Using Smoke, Etc.

BY G. C. GREINER.

A few incidents from actual observations during recent years may answer the above, and at the same time throw some light on Mr. Hanna's question, on page 87, "Can some scribe account for this, unless bees make a difference?"

Certainly, bees make a difference, but the puzzling question is, What induces bees to make the difference?

When visitors call at my place and see me handle my bees without any protection in such an indifferent way (indifferent in regard to fear of being stung), they almost invariably express their belief that bees know their master, and willingly submit to his dictates. As an explanation on this point I always give my views something like this:

Bees have no regard for any certain person. If you do as I do you will not get stung any more than I do, and if I should do as you do I would be liable to get as many stings as you would receive. For instance, I am requested to explain the inside of a bee-hive by actual demonstration with one of my colonies. I may have the smoker within reach for an occasion of this kind, or, if it isn't already lit, I may depend, according to the expected length and nature of the demonstration, upon my little briar-pipe for means of defense. The visitor, considering too close quarters a little dangerous, stands off 5 or 10 feet to watch my manipulations, and before the lecture is half finished he is forced to beat a hasty retreat while I remain at the hive unmolested.

Do bees know their master? It seems so in this case, but I believe there is another factor we should take into consideration. In my opinion, it was more the nearness to the open hive, where the ascending hive-atmosphere had a fair chance to encircle my body, than my individuality that kept me from being attacked. Had our positions been exchanged from the start, no doubt I would have been the selected target in spite of my ownership.

Here is a little illustration that seems to prove my claim: When I am busy among my bees, it frequently happens that a few ugly ones keep buzzing around my head with intentions of an undesirable nature. By placing my head where flying bees are thickest, in some cases even by kneeling down close beside the hive under operation, to get my head as close to the broodnest as possible, in nine cases out of ten, these pesterers will leave in a short time and cause no more trouble thereafter.

At another time a friend called on me for some information about introducing queens. He had received a number of valuable queens and felt very anxious to have them safely introduced. To learn all he could from actual observation, he gladly accepted my offer to go into the yard and have me give him a few practical hints by examining some nuclei where a few days before I, too, had introduced some choice Italian queens. Our investigations proceeded in the usual way. I had taken from one of the nuclei the comb that contained the queen, and after we had watched her for a few minutes—perhaps a little too long—I was about to replace the comb to its proper place, when one of the flying bees, without apparent cause or provocation, stung me on the back of my hand, and, before I had time to lower the comb into the hive, a dozen or more had planted their sharp ends within a small radius of the first sting.

After restoring the hive to its normal condition I leisurely scraped the stings out of my hand, much to the astonishment of my friend, who exclaimed: "Mr. Greiner, that is the most nerve I ever saw displayed by any human being."

Did the bees know their master in this case? If they did they had no regard for his feelings. But the matter is easily explained. Attracted by the scent of the first sting's poison, the defenders of the hive, imagining their home in danger, went to the assistance of the first offender, and the subsequent stinging was the result.

It is generally accepted as a fact that bees have a marked aversion to all dark colors. Always aiming at a person's eyes, and leaving their stings in black hats and dark clothes, seems to prove this, and this may have a little bearing on Mr. Hanna's case. Besides, I believe that the change of the order of things irritated his bees as much as the individuality of his callers. If they had been with the family from the beginning, and during all the time they were seated in the yard, these new comers would not have been molested any more than the rest—and they might have been on account of their color and some other peculiarities.

Self-Spacing vs. Loose-Hanging Frames.

A few facts on this subject may be acceptable to the beginner who contemplates laying in a stock of beeware. I would consider myself a poor hand at the business, if I could not manipulate self-spacing frames without causing me serious trouble. I have handled them quite a little for other people, but I would not have them in my own yard. When we consider the case of manipulation of the loose-hanging frame, the rapid work they facilitate, the keeping of our bees good-natured, for we all know that it is the rolling of bees between the combs that raises their temper, which is next to impossible to prevent with the self-spacer, unless we undergo the lengthy operation of removing the follower and shifting a hive full of frames to take out one or two on the opposite side; the less work in manufacturing the frames, the comfort and pleasure in handling them, etc., the self-spacing frame is not to be compared to the convenient, loose-hanging one.

This is no hobby of mine, nor theory; I prove it to my visitors quite often by actual demonstration. Last summer, when taking a sort of survey through the yard with a bee-keeping friend, who, by the way, uses the Hoffman frame, he said, after we had examined a number of colonies: "Well, Mr. Greiner, if I could handle my frames with the ease you can yours, I would enjoy bee-keeping better than I do now." So much for the different frames.

Handling and Smoking Bees.

Mr. Doolittle's article on this subject, beginning on page 81, covers the ground so completely that I hardly see a chance, as the old saying goes, to get in a word edgewise. To the beginner I wish to emphasize this point:

It is not so much the quantity of smoke we use or need, as the right time and the right place, when and where smoke should be supplied. I dislike to see my bees, or anybody else's bees, tortured with a deluge of smoke unless it is strictly necessary. A little puff across the hive (not into the hive), when they begin to travel towards the top of the frames is generally sufficient to keep the upper hand of them; it is the bee that takes wing from the top of the opened hive that causes trouble.

Killing the annoying tormentors is all right, but I seldom pay any attention to their uncalled-for pleasantries; they generally leave after they find that they can't scare anybody. But to be on the safe side, I always keep a few paddles (separators) scattered through the yard, to use in case of emergency, as Mr. Doolittle sets forth in his article. I even go one step farther: Sometimes, when they get too numerous and persistent trying to do mischief, I coax them into the honey-house for safe keeping, or dispatch them. This is easily done, by backing slowly towards the building and teasing them on the way to still greater fury; they follow me through the carefully-opened screen-door, unaware of the trap that is set for them. Once inside, and the door closed, they are my game, and if the catch has been reasonably successful, it may end the trouble for the rest of the day.

La Salle, N. Y.

Diseased Cells in Foul Brood

Read before the meeting of Apiary Inspectors at Amherst, Mass.

BY DR. C. C. MILLER.

Suppose a half-dozen or more foul-brood inspectors assembled together. Now, without any previous discussion of the matter, let a slip of paper be handed to each, and on the slip let there be written:

1. Largest percent of cells diseased with foul brood that would allow the case to be called very mild.
2. Smallest percent that would allow the case to be called very bad.

I would like to have, then, the privilege of examining those slips. I venture the guess that they would not be monotonously alike.

Then let an actual case of foul brood be inspected, and let each write on a slip his estimate as to the percent of diseased cells present. I venture again the guess that they would not be monotonously alike.

It is just possible that I am all wrong in my guessing, and that nearly all our inspectors have made an actual count in a number of cases. If they have, it would be a good thing to publish the figures, for definite knowledge is a thing to be desired. If they have not, the counting is easily done.

Take a diseased comb, and on it mark off with the point of a knife a rectangle of any size, say about 4 inches square. It is not hard to follow a row of cells and count the diseased ones, but there is some danger of losing one's place in going from one row to another. To avoid that, stick a pin into the first cell of the first row you begin counting. Then as you go on move the pin each time to the first cell of the next row. Now suppose you have 23 rows of 20 cells each, or 460 cells in all, and that you find 121 cells diseased. Divide 121 by 460, and you have 263 thousandths, or a little more than 26 percent as the desired answer.

I may remark that however it may be in American foul brood, in European it is rather necessary to pick open with a pin each sealed cell as you go, otherwise some sealed cells will be passed as healthy when they are really diseased.

In connection with this matter it would be interesting to know in each case the exact proportion of diseased cells that are sealed and unsealed. That would be easily obtained by counting first the unsealed cells and afterward the sealed cells, the latter to be torn open as they are counted.

If we can have actual figures given in a number of different cases by a number of individuals, it will make interesting reading for the bee-papers.

Marengo, Ill.

Catnip (*Nepeta cataria*), Leaves and Flowers.— See page 137.)

The Entrances of Bee-Hives

BY G. M. DOOLITTLE.

"I have been making some hives for my increase in bees this summer, making them and the supers with no provision for an entrance save the main entrance, which is given by way of the bottom-board. In this way the hives and supers can be interchangeable, or piled and tiered at will without danger of bees getting in to carry the honey off when stored right in the apiary, save as they are set on a bottom-board. When thus set there is an entrance the whole width of the hive unless contracted by entrance-blocks. I had supposed this was the better way to make hives until an old bee-keeper came along a few days ago, telling me that it was necessary to have an entrance into the supers, so that during the surplus season the bees with their loads of honey would not have to travel so far, crowding up through the combs and bees below, and in this way lose much of valuable time. This thing has worried me, and I presume it does others. Therefore, will you be kind enough to tell us something on these matters through the columns of the American Bee Journal."—Correspondent.

This reminds me of something I heard an apiarist say many years ago at a bee-convention. He said, "The hive that might be best for the bees, and the one that might be the best for their keeper, may not be one and the same thing." We apiarists build hives for our convenience, and not the co venience of the bees. Elisha Gallup told us years ago, when writing on this hive question for the American Bee Journal, that bees would build just as as much comb and store just as much honey in a large nail-keg as they would in the best hive that was ever invented; and then asked why we did not all use nail-kegs. Answering, he said, "Because in this enlightened age of the world, honey cut from nail-kegs was not in *marketable shape*." And this marketable shape is the main reason why the "log gums" of our fathers have given place to the improved hives and sections of the present day; not for the reason that more honey can be stored in these than in some of those old logs which would hold from 200 to 400 pounds. It is only when we make our hives so inconvenient for the bees that they can make no headway storing surplus honey, or the hives so far from the natural needs of the bees that they can not winter well, that the limit is reached and we become the losers.

Motherwort (*Leonurus cardiaca*), Leaves, Flowers, and Seed Clusters.—See page 137.

For these reasons a hive must be, to a certain extent, a sort of compromise between what the bees would like, or make for themselves, if they could have things just as they wanted them and what the apiarist would like. And, to my way of thinking, when Mr. Langstroth put his hive and principle before the world, he brought the greatest boon possible to us in the way of such a compromise. To be sure, all have not been satisfied with this boon. And, it is only natural, that every beginner should think that he has "a flea in his bonnet," which is the largest thing known in the bee-keeping world; just as every man and woman, when they are united in marriage and go out to make a home of their own, want to build that *home* to their own liking rather than take the nicest home built by some one else. Hence, hives almost without number, have been launched on the apicultural sea, the most of which have been built for the purpose of providing "a natural home for a colony of bees." But, strange as it may seem, more often than otherwise, the apicultural road has been strewn with the wrecks of blasted hopes and disappointments.

Years ago, when I first commenced keeping bees, while passing through a piece of woodland in early spring, I was surprised to hear the loud humming of bees, such as is usually made on the first cleansing flight after the confinement of a long winter, and, on looking about, I found a strong colony of bees in full flight from two holes in a tree near by, the upper hole being about 18 inches above the other. I waited until fruit-bloom when I cut the tree and transferred an extra-strong colony from it into one of my hives, opening the cavity of their home from the back side, as I wished to preserve these entrance-holes for future reference. Upon looking this log over the next winter, when about to make some new hives, I was sure I had found something very valuable by way of two entrances for all hives, and something equally valuable by way of upward ventilation for wintering, as the upper entrance for the bees was near the top of the cavity in the tree which made the home for this strong colony.

So I went to work and made 10 hives on this "new principle" I had learned about the "natural home for the bees." Well, how did it result? Six dead colonies out of the 10 the next spring, and hardly as good results in section honey, especially in the sections near this upper entrance. After studying on the matter for some time I saw that this colony had gone into a tree in the middle of a large piece of timber, and was located where the winter's wind never even stirred the snow, while I must of necessity keep my bees "in the open," as it were, and the great ventilation that was given with both entrances open, causing a draft, took too much heat away from the cluster of bees, which resulted in the consumption of large quantities of honey for "fuel" purposes, and in this way the bees contracted "bee-diarrhea," as well as becoming worn out of old age through the activity required to offset this draft.

Then, a year or two later, I found out something which, to my mind, was conclusive proof that an upper entrance was not needed to save the bees in their travel to the supers. About the year 1873 I procured my first colony of Italian bees, and being alive with interest in these bees, I was constantly "poking my nose" into their hives to ascertain whether they were really any better than the blacks I had before they came. I had requeened several colonies at a time, so that when basswood was yielding its best flow of nectar, young bees from the Italian queens were numerous from one to 14 days old, while the rest of the bees, or those older, were all blacks. Looking at the entrances of such hives from 9 to 11 a.m., I saw none but black bees issuing or returning, those returning being very heavily loaded. I thought here was a chance of seeing these loaded black bees crowding their way up between their combs of bees in the brood-chamber and into the sections, where I could see them putting their heads in the cells as they unloaded this nectar therein. Did I thus see? Well, no. And I do not think I was ever more disappointed in my life, for I had been told, as our correspondent was, that bees needed an entrance directly into the supers, and my reason told me that this would be true. What did I see was, 20 Italian bees in these sections to one black, and these young Italians were "as busy as bees," poking their heads into the cells, many staying thus for some little time, others not so long, filling the cells with nectar, while others were building comb, drawing out the cells, etc., so that the work inside the super was as efficiently done by these young Italian bees as was the field-work done by the older blacks. This proved that the *super-entrance* was of no value, and also proved that the bees which gathered the nectar were not the ones which deposited it in the sections.

And I have had many proofs of a similar nature while watching the bees at work in an observatory hive, beside which I have sat for hours, both by daylight and with a lamp at night. Therefore, I now make all my hives without entrances, as does our correspondent, feeling assured that the entrance in the bottom-board is all that is needed when the best interests of the owner, combined with the best interest of the bees, are both considered.

Borodino, N. Y.

Ventilation of the Hive

BY D. M. MACDONALD.

All bee-keepers are agreed that there is need of some system of ventilation in the bee-hive, but all do not agree about the best way of securing this desideratum, so that the process may be carried out by the bees with a maximum of success at a minimum of cost. Hence we have the crown or sealed-cover men; and the *light porous quilt* disciples. The steadfast faith of these separate opponents, in their own system, proves that both serve the purpose with at least a marked degree of efficiency.

One set maintains that, following Nature, bees are best covered over during winter in such a way that there will be not only no escape of heat, but that there will be no upward ventilation whatever. They reason that bees in a state of Nature, when making their domicile in a "cleft of the rock," or in a "hollow oak," are *hermetically* sealed above the cluster, and so they adopt the "sealed cover." Through a long period of years I have found bees in hollow trees, in churches, and similar buildings below the slate roof, in out-houses between outer and inner walls, and many similar situations. In every case under the last two heads there was not only ample ventilation, but I would conclude a superfluity of this necessary to their well-being. The hollow tree has been instanced times without number as a model sealed cover—why I can not conceive—and I can only conclude that arm-chair apiarists have been reasoning the matter out from their inner consciousness without regard to actual facts.

In the very nature of the case, there must be *decay* in the interior of the tree before it can have become hollow. Out of the large number I have examined, and adding to this very many more correspondents have informed me of, *not one* was what in any sense could be described as hermetically sealed above. In most instances there was an immense reserve of unoccupied space generally both above and below, and frequently at both sides, affording ample means of ventilation. In all cases soft, pulpy matter, both dry and porous, ran up and down, often several feet above and below the point where the bees presciently selected their base of operation. Such trees almost invariably are possessed of large knot-holes in their gnarled trunks; while very frequently the internal weakness aids the winds of heaven in making "shakes" and cracks in the timber of the tree, each of these serving the purpose of a ventilation excellently well.

Old straw skeps are pointed to as being so well propolized that they afford no means of upward ventilation. This is rank nonsense. Gas, carbonic-acid gas, is an elastic aeriform fluid which penetrates upward through far more dense substances than either a straw-skep crown or by means of apertures in the presumed hermetically sealed crown board of any ordinary hive.

Bees are living creatures, and even the closest cluster in under zero cold is never an inanimate mass. Each bee is a living, sensate being, and to live they must breathe. Thus animate, they are constantly charging the air in the hive with noxious gases, which, if retained in the interior, would vitiate the air and thus cause the inmates vexatious worry and ill-health. The air of our schools, churches, theaters, and every similar place where large numbers of humanity are wont to assemble become charged with poisonous gases, producing headaches, nausea, and often consequent ill-health, and if people were to continue long in such a vitiated atmosphere, even death might follow. Wisely, most elaborate systems of ventilation are provided in all such gathering centers. Our dwelling houses, too, are carefully ventilated. Similar provision is an utter necessity in a bee-hive if we are to have healthy bees and strong, rousing colonies in the spring. In cellars and in colonies wintered on the summer stands, some system must be adopted to secure ventilation so necessary for the bees' comfort and health.

Boneset (*Eupatorium perfoliatum*), Leaves and Flowers.—(See page 137.)

Bees in winter have to eat to live, and, as a consequence, they breathe through the spiracles found in both the thorax and abdomen, every movement produces this consequence. Hence, is generated the carbonic-acid gas noted above, and another important constituent is water. Now both of these *must* be gotten rid of in some shape or other, and bee-keepers generally agree that the best means for attaining this desirable end is by securing upward ventilation through porous coverings, and then ultimately evaporate the water or gas into the outer atmosphere. Loss of heat is equivalent to loss of honey; therefore, the wrappings overhead must conserve the internal heat, yet they can be of such a nature as will serve to afford the necessary ventilation and keep the hive dry.

Honey contains a large proportion of water, even when in its densest condition, and it may be taken as correct that the consumption by the bees of 24 ounces of honey will produce no less than 18 ounces of water! This is given off by the bees in the form of vapor. Warm air, such as is found in the hive interior when overcharged, deposits the water it can no longer contain, in the form of a dew. If this moisture can penetrate upward while in the form of vapor we have a dry hive; if it is confined to the brood body, it is cooled by the chill of the incoming air, or by the cooler layer of air which persists near the sides of the hive away from the cluster, and hence we have a heavy deposit of moisture on the hive-walls, which gradually turns into small, trickling rills, and then these find their way out of the entrance, perhaps. If not, the moisture may even be formed into ice in the interior, thus chilling the brood-nest more than is good for it. Unless in the cluster, or a space near it, under improper ventilation, the air becomes supercharged with moisture, thus ruining the combs, and deteriorating both honey and bee-bread where these become charged with the dewy, damp deposit.

One result of bad ventilation is that the bees are incommoded, and are therefore roused from their state of semi-hibernation. The consumption of honey to get up more heat is a minor evil. They have also to renew the tissue being worn down consequent on the rousing up and movement of muscles, and to do this they partake of pollen. This works evil in early spring, as it leads to bowel distension when no flight can be safely undertaken to secure outside cleansing. Hence, we have dysentery, spotting of the combs, and fouling of the hive-front and flight-board.

Upward ventilation, allowing the escape of foul gases through the porous covering, and also the steady percolation upward of the watery vapor, with its subsequent dissipation in the upper air, insures a warm, dry interior with a supply of fresh, sweet air enveloping the cluster. Away back about 40 years ago, open, porous coverings were almost universally used in America, while on this side the "crown-board" was the favorite device. We then adopted the quilt, which at once "caught on," and from then until now this system of overhead covering has firmly held its place as the prime favorite. If I read the signs of the times aright, evolution is slowly but surely working its way in favor of warm, porous coverings above the brood-nest all over the American continent.

Banff, Scotland.

Brood Diseases—Live Question

BY C. P. DADANT.

It is of extreme importance to the bee-keepers of the country to be able to recognize at a glance the differences between the so-called American and European foul brood as well as the difference between the latter and pickled brood, which can not be called a disease, if we are to rely on our best authorities.

For some time past, most of us have become acquainted with the peculiar diagnosis of American foul brood, the true malignant foul brood, which, for that matter, is as common in Europe as it is in America. The *ropiness*, the *coffee-color*, the *glue-pot smell*, when these are present together, the dangerousness of the disease can not be doubted, and the starvation method is the only practical remedy. Both the disease and its cure have been described often enough to satisfy every one that the transmission of it is in the honey, and that all infected combs must be removed, as explained in the McEvoy-France method.

But when the ropiness is absent, as well as the glue-pot smell, how are we to decide at first glance whether the disease is black brood (European foul brood) or only pickled brood? I asked this question of several of our leading men. Dr. Phillips said it could not be readily distinguished, except by an expert. But the experts have no infallible signs as yet, since they have so far failed to find the bacillus of black brood. Yet is not this an important matter to every one of us?

With this question in view, I resolved to make enquiries that might lead us to more positive knowledge.

The following letters will explain themselves. I have great faith in the opinions of McEvoy, not only because he has a very extensive experience in foul-brood matters, having been an inspector of bees in the Province of Ontario for 19 years, but also because even some of his opponents in other matters acknowledge that he is the best posted man in all questions concerning brood-diseases. I quote France, because he also is one of the most positive and experienced authorities, with long experience in foul brood. I quote Dr. C. C. Miller, because his trials and success in the eradication of European foul brood are quite recent. Finally, I quote Mr. Kildow and his lieutenant, Pyles, because both of these men have scoured a number of Illinois counties, and have met all sorts of conditions:

Pickled Brood Should Be Called "Starved Brood."

When the weather conditions are favorable bees gather a good deal of honey all through fruit-bloom, and while they are bringing in honey daily the brood-chambers will be kept well supplied with *unsealed* honey, and as long as the *unsealed honey* (which is the first used) lasts, all the brood will be extra-well fed. But in some springs, when the bees are working well in fruit-bloom, and going into brood-rearing on a large scale, wet weather sets in, and shuts off honey-gathering for days. Just as soon as this occurs the bees quickly feed the *unsealed* honey to the brood, and when this is gone they do not uncap the sealed stores fast enough to keep pace with all the brood that requires feeding, and the result is more or less starved brood. Some of the brood that dies of starvation, while in the coil form, *turns a little yellow at first, and later to a dark brown, and dries down in its skin.*

All brood that dies of starvation when the bees have it about ready for capping, will be found on the lower side-wall of the cell, with the end turned up a little, and will have a dark and tough skin on, and like all starved brood it *dries down in its skin*, and turns to a dark, dry crust on the bottom and lower side-wall of the cells; and after that it can be easily cleaned out by the bees.

Bees always feed the brood much better when they have plenty of unsealed stores, but when the colonies run out of *unsealed* honey for days at a time between fruit-bloom and clover, it is then that the bees fail to get all the brood fed, and the result is starved brood. When a bee-keeper examines his colonies then and finds starved brood, he, like others, will say that his colonies have "pickled brood."

On the night of May 28, 1889, we had a killing frost all over the Province of Ontario, followed by several days of wet weather, shutting off all honey-gathering for some time. This awfully sudden check coming after one of the most favorable springs for bees that I ever saw, and so near the honey season, caught all colonies very full of brood. I knew that the *unsealed* honey would soon be fed, and to help the bees to keep feeding the brood just as much as if nothing had happened, I fed warm syrup to all colonies every evening for some time, and often was surprised when I examined the combs to see how much syrup it took to feed all the brood well when the bees were not bringing in any honey. My colonies gave a much larger average yield of clover and basswood honey that season than any that I heard of.

Black Brood.

This is a disease that breaks out among black bees and their crosses. The most of the brood dies of this disease *when in the coil form, and after death turns yellow, then brown, and dies down into a black crust on the bottom and lower* side-wall of the cells, and when real dry can be removed from the cells by the bees. When the rotten matter is sinking down *some of it has a melted appearance.*

Black brood can be easily headed off by going ahead of it and requeening every colony with pure Italian queens.

In the Canadian Bee Journal for July, 1909, page 252, you will see an article of mine, headed, "Forty Thousand Italian Queens Needed." I claimed that it would take 40,000 Italian queens each year for 5 years to bring the apiaries of our Province up to where they should be.

Foul brood—the real serpent itself—can never be headed off by any breed of bees, but other colonies can be prevented from getting it by the inspectors going to work early in the spring, before any robbing sets in, and where foul brood colonies are found near valuable apiaries, have the diseased colonies moved away in the *evening* to where they will be a safe distance from all apiaries, and leave them there until cured. Many bee-keepers have lost hundreds of dollars through their bees robbing foul-broody colonies in the spring that were kept by other men. I got the disease kept out of some of the best apiaries in our Province by getting some men to move their foul-broody colonies away before robbing sets in.

WM. MCEVOY.

Woodburn, Ont., Canada.

The Opinion of Mr. Pyles.

MR. C. P, DADANT:—I am glad of the privilege of adding my mite to this discussion. My observations have been that European foul brood differs radically from pickled brood. European foul brood begins dying as early as the second day, and in most cases turns yellow, decidedly so, and while it settles down in a somewhat shapeless mass it yet stays within its own skin, and, when dry, can often be shaken out of the cell.

Pickled brood does not begin dying until the pollen-feeding stage, and is never yellow. Most of the deaths occur, I should say, on the 6th or 7th day, while I believe most European foul brood deaths occur earlier.

In conversation with Mr. Kildow yesterday, he agrees with this. I. E. PYLES.

Putnam, Ill.

The Opinion of Dr. Miller.

FRIEND DADANT:—I don't know pickled brood, but did not suppose it had the distinctively yellow color of the dead European foul brood.

It isn't easy to be exact on little points about foul brood without having the thing before you. I *think*, however, that in European foul brood the dead larva dries down without the skin breaking. Miss Wilson, however, says it has a sort of *melted-down look*. I remember one day seeing a number of dead larvæ that had been thrown out on the hive-entrance. It had been quite rainy, and the larvæ had swelled up to more than life-size. Certainly there had been no breaking of the skin in that case.

McEvoy says European foul brood is a disease of the blacks. My Italians had it.

Marengo, Ill. C. C. MILLER.

A letter written by me to Mr. France brought the reply from him that he would meet me at Madison, at the State bee-keepers' meeting where I intended to be present. At this meeting, held Feb. 20, 1912, the matter was fully discussed, and the following symptoms were practically agreed upon under the leadership of Mr. France:

"European foul brood, or black brood, dies mainly during the *first stages* of the life of the larvæ; becomes of a pronounced *yellow color*, and rarely becomes sealed before death. It *melts down to a shapeless mass*, but the skin rarely breaks.

"Pickled brood dies later, especially at the time when the larva is extended longitudinally or *stretched in the cell;* looks *brownish with gray streaks*, and may be lifted right out. Held up to the window, it assumes a *bag-like appearance, as if full of water*, and turns dark. The skin never breaks, and it dries down so as often to be easily shaken out of the cell. If sealed, both kinds may have perforated cappings, but both may be easily cleaned out by the bees. Pickled brood is not in any way contagious, and if combs containing it are given to healthy colonies, it will be cleaned out readily."

The above statements being referred to Mr. McEvoy for comments, he replies as follows:

Further Opinion of Mr. McEvoy.

FRIEND DADANT:—Your letter is received. Many thanks to you for sending me the descriptions given by France, Dr. Miller, Kildow, and Pyles, of the different kinds of dead brood.

I am pleased to say that I fully agree with them when they claim that "European foul brood dies during the first stages of the life of the larva, mostly. It turns yellow, rarely becomes sealed before it dies, melts down to a shapeless mass, but the skin rarely breaks." Where these men use the words "dies during the first stages of the life of the larva," I said "dies when in the coil form," which shows very plainly that we all agree—"melts down to a shapeless mass, but the skin rarely breaks." Although it has a *melted appearance.* I did not care to use the words "melts down;" I said, "sinks down." But as this shows that we all agree, only we have not used exactly the same words in some parts of our descriptions, I fully accept the descriptions given by France, Pyles, Dr. Miller, and Kildow, to have this disease known by, and thank Mr. Dadant very much for this.

I will now turn to the starved-brood descriptions given out by these four great experts. I am very much pleased to see that we all stand exactly agreed on every point but one, which is rarely seen.

When brood-rearing is carried on in "off" seasons, and in times of blights, and during sudden checks in honey-flows, the bees fail to gather honey enough to keep the brood-chambers supplied with UNSEALED honey, and during these periods of a *shortage of* UNSEALED *stores,* the bees don't uncap the sealed honey fast enough to keep pace with *all* the brood that requires feeding, and the result is the brood that is not fed enough has to die. During these unfavorable conditions black bees are the poorest feeders of their brood of any breed, and Italians are the very best.

"*Starved brood dies in the later stages of larval life, later than European foul brood.*" In nearly every case this will be found just as stated above.

"*Does not look yellow, but has grayish streaks.*" In rare cases where much of the brood dies from starvation, a little of it in the coil form will be found with a little of the yellow tinge at first, which will soon turn to an ash color if the bees don't drag it out of the cells—a thing they usually do with the smallest dead brood of this kind.

"*Dies stretched in the cells.*" Yes, and in every case more or less starved brood will be found like this, and some of it will have the end turned up a little.

"It may be lifted right out; has a *bag-like appearance, with water at its lower end; turns dark.*" Yes, this is very true in every case."

"May be lifted right out when dry." Yes, and when it dries down to a little crust the bees clean it out of every cell.

"May have punctured or sunken cappings." Yes, this is also very true. Brood that is *not fed quite enough* before it is capped to last it until hatched, has to die. Later on the bees puncture the capping on these cells of starved brood, and after the brood dies down the bees trim off the punctured capping, and clean out the cells, and then they are used again.

By keeping pure Italian bees, and giving them proper management, none of these kinds of dead brood will be found among them.
WM. MCEVOY.

Woodburn, Ont., Canada.

Now let us go to the official description of black brood (European foul brood) by Dr. Phillips:

"This disease attacks larvæ earlier than does American foul brood, and a comparatively small percentage of the diseased brood is ever capped. The diseased larvæ which are capped over have sunken and perforated cappings. The larvæ, when first attacked, show a small yellow spot on the body near the head, and move uneasily in the cell. When death occurs they turn yellow, then brown, and finally almost black......"

The balance of the description is not necessary here, as it is only to show the differentiation from American foul brood, on the absence of "marked ropiness," glue-pot smell, etc.

Let me again quote McEvoy, and in case any one thinks that I am giving him too much prominence, let me say that his competency has been acknowledged by the official investigators who quote him as "the veteran inspector of Ontario." (Meeting of inspectors of apiaries at San Antonio, page 35):

"FRIEND DADANT:—Please give it out that I say that 90 percent of the so-called European foul brood is only starved brood."

Again, in reading over the foregoing letters, we find that Dr. Miller takes exception to McEvoy's assertion that the introduction of Italian bees will cure European foul brood, by saying that his own Italian bees had it. Yet we find the same opinion as expressed by McEvoy in the "Meeting of Inspectors," page 64:

"It has been shown repeatedly that Italian bees are *less liable* to disease than most of the black bees."

The introduction of a young Italian queen in a diseased colony having European foul brood forms the principal part of the Alexander method, in addition to keeping the bees without brood for a few days until they have time to cleanse the cells.

I would have taken the pains of quoting the Eastern authorities upon these questions were it not that their views are practically embodied in the Report above mentioned. Besides, very few of them make the difference plain between pickled or starved brood, and European foul brood.

The purpose of this lengthy article is to call the attention of our Western producers to these conditions. I trust every man who finds disease in his apiary will investigate thoroughly and report. There is nothing frightful about the bee-diseases if we are fully posted, know how to treat them, and do it without delay. But we must be able to diagnose them. It is important for an apiarist to know each of these diseases apart as it is for a doctor to know small-pox from the measles.

Hamilton, Ill.

Joint Session of New York Bee-Keepers

The Jefferson and St. Lawrence Counties, New York, Bee-Keepers' Associations met in joint meeting at Watertown, N. Y., Feb. 1 and 2, 1912. A very interesting program was carried out, with some able speakers from abroad. Our associations are increasing in membership very rapidly. The Jefferson County Association now numbers 42 members, and hopes to report 50 members for 1912.

The election of officers took place the second day. The officers of the Jefferson County Association are: President, A. A. French, of Black River; vice-president, F. H. Loucks, of Lowville; and secretary-treasurer, Hudson Shaver, of Perch River.

Officers of the St. Lawrence County Association are: President, F. C. Hutchins, of Massena Springs; vice-president, C. Otto Enders, of Oswegatchie; and secretary-treasurer, Racine Thompson, of Depeyster.

Delegates to the State convention at Rochester are these: Elton D. Shaver, of Depawville, and G. B. Rickett, of Rosiere. Alternate, Hudson Shaver and F. H. Loucks.

HUDSON SHAVER, *Sec.*

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Untested and Tested Queen—Swarms

1. What is the difference between an untested queen and a tested one?

2. When I am in the woods in the spring I can hear bees roaring. Is there a bee-tree close by?

3. How far will a swarm go off to a tree?
TEXAS.

ANSWERS.—1. If a man sends you a queen as soon as it begins to lay, or any time before young bees from its eggs have emerged from their cells, that's an untested queen. If he sends you one which has been laying long enough so that he can tell by its worker progeny that it is purely mated with a drone of its own kind, that's a tested queen. An untested queen may have commenced to lay, or she may have been laying any time up to 21 days. A tested queen has been laying 21 days, or longer.

2. I suppose you mean is there a bee-tree or a hollow tree with a colony of bees in it close by. Not very likely. You will not hear the bees in a tree unless you put your ear close against the tree, and the bees flying back and forth to their home in a tree do not make as much noise as they do when working on the flowers of a tree, such as basswood. But you may hear just as much noise in a tree where there are no blossoms, if there is honey-dew there.

3. Nothing definite about it. They may go a few rods or a few miles. They are likely to go to the nearest place where they can find suitable lodging.

Storing Hives Full of Empty Combs

Last winter was a hard winter on bees that were left outside. We had 44 colonies; lost all but 6. We would like to have you tell which is the best way to put the old hives away, to use them when we get more bees—cut the old combs out or leave them in?
ILLINOIS.

ANSWER.—The nicest thing is to let the bees take care of combs that are not in use. Put a story filled with the combs under a strong colony, so that the bees shall pass through these combs in going out and in, and you may be sure they will be cleaned up and kept in fine condition. In a few days a second storyful may be given on top of the first one. Then a third one may be set on the stand, the colony on that, and over the colony the 2 stories that were first given. After a day or two a fourth may be put between the colony and the lower story. That gives you now a pile 5 stories high, with the colony in the middle. With 6 colonies you can have 6 such piles; but even at that it would leave 14 stories of combs unprovided for.

So you must resort to other measures. If your combs have been kept in a cool cellar, the larvæ of the bee-moth will be rather slow about developing. But you may as well kill them, and the best thing to kill both eggs and larvæ is bisulfide of carbon, or carbon disulfide, which is all the same. You can probably get it at your druggist's in a pint can. In a cellar is a good place to treat your combs, piled 4, 5, or 6 high. Make a thin dough of flour and water, just thick enough so it will not run, and with this plaster all joints, so as to have everything as nearly air-tight as possible. On top of the pile set a saucer into which you will pour 2 or 3 tablespoonfuls of the liquid. Over this set an empty hive-body with a cover plastered to it. Be careful not to breathe it, and be sure not to have a light near, or you may have an explosion. Then if you will keep your combs where they will not get moldy they will be all right until needed again.

Bee-Paralysis

I have a colony of bees which developed bee-paralysis about the first of April. The colony is very badly affected. It is a 3-banded Italian colony with a queen one year old. It was wintered out-of-doors in a single-walled hive, with winter-case and packing of newspapers. The colony seemed to be healthy until March 15. The hive was dry all winter, and the colony went into winter quarters with 40 pounds of fall honey. What is the cause of this disease developing? Can it be spread to other colonies? What is the best method of curing the disease?

PENNSYLVANIA.

ANSWER.—I don't know why paralysis should develop so suddenly and so violently. It is something very unusual. Just what is the cause of bee-paralysis, the best authorities do not claim to know. Many cures have been claimed, but perhaps you can do nothing better than to let the bees alone. As far north as you are, it generally disappears of itself without doing any great harm. It does not spread from one colony to another, and if it is nothing more than bee-paralysis you need not feel alarmed. But are you certain it is paralysis? Is there no disease in the brood? If you are at all uncertain about it, communicate with Dr. E. F. Phillips, Department of Agriculture, Washington, D. C., sending him a sample of brood if it is diseased, and you will get an expert decision from him. It will cost you nothing.

Rearing Queens—Preventing Swarming—Feeding Maple Sap

1. What is the best method of rearing queens to introduce into the colonies in August?

2. What is the best way to prevent swarming? Is the cutting out of queen-cells a good way?

3. How would it do to draw sap from maple-trees in buckets and feed to the bees in early spring to start brood-rearing? Would this not be better than sugar syrup?

WISCONSIN.

ANSWERS.—1. I don't know that there is any particular difference between rearing queens for introduction in August and rearing them for introduction at any other time. There may, however, be a difference in this respect, that you can get cells from colonies that have swarmed, and these may mature into laying queens in good time for introduction in August. Swarming-cells, if taken from the right kind of stock, are likely to be as good as any you can get.

2. I would give a good deal for the best answer to that question. Cutting out queen-cells every week or 10 days will sometimes prevent swarming, and sometimes not. Sometimes the bees seem only the more determined, and after you have cut out the cells, will swarm with nothing beyond eggs in the queen-cells. Many prevent swarming by shake-swarming, or taking away all brood but one. Some prevent it by the use of J. E. Hand's non-swarming arrangement.

3. I don't know that maple-sugar syrup is any better than cane-sugar syrup. Likely, however, it is just as good. Care should be taken about feeding either when it is not warm enough for bees to fly.

Increasing from 8 Colonies to 55

I put 55 colonies of bees in the cellar last fall. There are 8 of them alive. I have 300 brood-frames with good comb, 100 of them are half full of honey. Honey-dew killed the bees.

I want to know the best way to fill these frames with bees again. I intend to buy my queens. Can I, in June, take one frame of brood and 2 frames of honey and a queen and some bees; in July, 2 frames of brood, 2 frames of honey, and some bees and a queen? How much increase do you think I can make of these 8 colonies in a good year if I buy all of my queens?

How many queens do I want at a time? If I could not use them right away, can I keep them in the bee-house for a day or two?

IOWA.

ANSWER.—If you will pardon the irregularity, I will answer without taking your questions in order. The number of queens you will get at a time depends upon what plan you take, and how many are needed. Better not get them any faster than needed. But you can keep a queen in her cage a week or so without trouble if you keep her in the house where she will not be chilled.

The number of colonies to which you can increase depends upon the strength of the 8 live colonies and on the season. If they are strong, and the season is excellent, you may have no trouble in getting back to your original number, since you buy the queens and have so many drawn combs.

Your plan may work all right by starting in June with a frame of brood and adding 2 more in July. But starting with so weak a nucleus is not always the most satisfactory way. Possibly you may like another plan that contemplates never having anything less than 4 frames of brood in a hive.

First thing, you must look out for your combs lest the wax-worms make havoc with them. You can put some of them under or over the colonies, where they will be well taken care of. Others you may treat with bisulphide of carbon, killing all eggs and worms.

Before any step is taken toward increase, the 8 colonies must be strong, each having 6 frames or more of brood. Some of them may be weak, and they must be helped by the strong ones. You may be able to have them all strong by the first of June, and may be not until some time later. But suppose it is June 1. From each colony you will take 2 frames of brood with adhering bees, of course looking out not to take the queen. That will give you 16 frames of brood. You will start 4 colonies with these, giving 4 frames of brood to each. The frames of brood you take from the strong colonies will be the ripest you can get, and you will, of course, replace them with drawn combs, putting these combs in the middle of the brood-nest. You will also fill out your new colonies with combs, thus using some of your honey. By the middle of June you will likely be able to repeat the operation, making 4 more new colonies, or 16 in all. Again, by July 1, you may be able to make 4 more, or 20 in all. Then, again, July 15 you may make 4 more. In the meantime, however, the first 4 you made may be strong enough to yield 2 frames of brood apiece, thus making 26 in all. By Aug. 1, 2 more of the little fellows may be able to help, making 34 in all. August 15 may bring you up to 46, and if the season continues good you may increase still later. Now, it may not pan out at all as pictured. But at any rate, your policy is to keep every colony fairly strong all the time, never drawing so much from any one as to leave it less than 4 or 5 frames of brood. Then you will not be caught at the tail end of the season with a lot of weaklings to be lost the next winter.

Caring for Weak Colonies

Out of 10 colonies of bees I have 4 that have come out very weak. I don't believe there is a quart of bees to the colony, although they have a little brood started. Please tell me what is best to do in such cases.

MISSOURI.

ANSWER.—You may be thankful if only 4 out of 10 are weak. Let them alone until some of the other colonies are strong enough to have 6 frames of brood. Then take a frame of brood from a weak colony and exchange it with a strong one for a frame filled as nearly as possible with sealed brood ready to hatch out. When this has mostly hatched out, you can make another *swap*, each time taking from the weak colony one of its poorest frames, and swapping for the best you can get. But don't give more brood than the bees can cover, or it will be chilled and lost. After a weakling has been thus strengthened until it has bees enough to cover 2 or 3 full frames, then you can give it from a strong colony a frame of ripe brood with the adhering bees, putting it close up to the brood, but not between two frames of brood. Of course, you will be careful not to take a queen with the brood.

Here is another way: Into an empty hive on some new stand put 6 or 8 combs of sealed brood with adhering bees, these to be taken from the strong colonies. It will be just as well to fasten them in the hive, only look out that you don't smother them. After they have stood 24 to 48 hours, you may then give them wherever they will do the most good to your weak colonies. If you give too many strange bees to a weak colony, there is danger that they may kill the queen, if they are taken directly from a laying queen; but after standing 24 to 48 hours they feel their queenlessness and will not harm any queen where they are given.

Bleaching Comb Honey

How can I bleach comb honey? I got about 2400 sections last year, and it was hard to sell it on account of its darkness. I see a process for bleaching it in "A B C of Bee Culture," but do you know of any better way? All the honey that is coming into the market is whiter than mine, and I can not account for it. If you know of a way to whiten honey, please let me know.

ILLINOIS.

ANSWER.—No; I can give no better way. It's one of the cases where prevention is better than cure, and I try to manage so there shall be as few darkened sections as possible. There are two reasons for sections being darkened outside: Being too long on the hive, and being too near old, dark combs. If a super of sections be left on the hive until every section is completely sealed, the central sections are very likely to be darkened. So I don't wait for the sealing of all the sections, but take off the super when all but a few of the outside ones are sealed. Perhaps the 4 corner sections will not be finished, perhaps 4 on each side. Then these unfinished sections are massed together and given back to the bees to be finished. At one time, when I used wide frames to hold sections, my practice was to raise a brood-comb from the brood-chamber and put it between 2 frames of sections in the upper story, so as to induce the bees to begin work promptly. It was very successful in that direction, but it was equally successful in getting the bees to darken the capping of the sections, for they would carry bits of the dark old brood-comb across to use on the sections, making them dark before ever the capping was finished. You will probably find that a thin top-bar will help to darken sections, because it allows them to be nearer the combs. On that account a top-bar ⅞-inch thick is desirable. You may also find more trouble with shallow brood-combs than with deeper ones.

[The above refers to the color of the cappings. The honey itself may have been dark, perhaps honey-dew. There is no known process to change its color.—EDITOR.]

Different Breeds of Bees Mating Queens

I am a lad of only 14 years, and I am very much interested in bee-keeping. To my notion, it is one of the most fascinating and pleasant kinds of work to be found.

I keep the hybrid bees the only kind kept around here). I have had nothing to do with any other race, but am seriously thinking of introducing pure stock into my apiary, and I hardly know what race to choose. The main honey-flow here is from the first of May to the last of June. The principal honey-plants here are white clover, vetch, raspberry and fruit-bloom.

1. Which strain of Italians are superior as to honey-gathering qualities?

2. Is the Caucasian bee as good as the Italian in regards to industry, gentleness and wintering?

3. Kindly give names and addresses of a few recommended breeders of pure Italian queens.

4. Will a queen lay that is forced to mate with her brother?

5. Which parent does a bee partake of most in color, generally?

6. Do bees always build up queen-cells that are inserted in the hive with larvæ in them?

7. What kind of a bee is the Cyprian? also the Banat?

OREGON.

ANSWERS.—1. Probably as good as any is the leather-colored, or darker, 3-banded.

2. There is probably no great difference in any respect as to gentleness. Caucasians have been claimed to be the gentlest of all bees. Yet some have reported differently.

3. At this time of the year there should be no trouble in finding these in the advertising columns.

4. Yes. But if you can force a queen to mate with a particular drone you have a great secret.

5. I don't know very much about it. They say that the progeny follows the parent with the most fixed character, but what appears in one generation may be different in the next.

6. Not by any means.

7. Cyprians are something like Italians in appearance, but have the reputation of being the crossest of all bees. Banats are much like Caucasians.

Great Losses—Plan for Increase

I had 21 colonies of bees last fall, this spring I have only 8 colonies left, the other 13 died during the winter, and 2 starved. I thought a great deal of my bees, but this winter was too cold for them. I have had bees 25 years, but never had any freeze to death except a few bees in among the colonies, but not a whole colony as long as they had honey. Some of those colonies that froze had hives half filled with honey, but still they froze to death.

I would like to build up my bees again to 25 or 30 colonies this summer. I have about that many hives and some old honey left them, if I can find some way to do it. I don't believe that my bees will swarm to amount to anything, because the spring is late, and they are late in rearing young bees, and the prospect for good swarms is not very good. The bees in the dovetailed hives suffered the most. I have only 3 colonies left in the movable-frame hives, the others are in boxes and gums, and I have no way to get at them to do anything with them.

I do not believe there are many bees left in this part of the country; one man had 9 colonies and lost all; a neighbor had 2 colonies and lost both; another 12, and has 3 left.

ILLINOIS.

ANSWER.—Having on hand 13 hives filled with drawn-out combs with some honey in them, you should have no difficulty in increasing 8 colonies to 25 or 30 if the season is at all good, and the prospects in that direction are now good. If you have not already done so, the first thing is to become familiar with the contents of a good text-book on bees, such as "Langstroth on the Honey-Bee." I see by your letter that you have also "Doolittle's Queen-Rearing," and that ought to help. Being familiar with general principles, you can then be guided by circumstances as to what is best to do in your particular case.

You might divide all your colonies at one time into enough nuclei to make the full number desired. That, however, is hardly so satisfactory as to take the safer plan of starting each nucleus so strong that there will be no danger of ending the season with a number of weaklings unable to winter over. So the first thing is to build up your 8 colonies strong. When the strongest of them have 5 or 6 frames of brood, then you can draw a frame of brood with adhering bees to help another colony not so strong. Only be sure not to draw so much from a strong colony as to leave it with less than 4 full frames of brood.

When all are built up so as to have 5 or 6 frames of brood each, then you may reduce each one to 4 full frames of brood by drawing from them frames of brood with adhering bees. The brood and bees thus drawn may be used to start new colonies with 3 or 4 frames of brood each, a ripe queen-cell being furnished to each. When the original 8 have built up strong again this performance may be repeated, and perhaps again still later on. Some of the earliest colonies made may also become strong enough to help in making others.

A little variation of this may be advisable. Instead of putting your 4 frames of brood and bees directly on a new stand, put them in a second story on an excluder over a strong colony, and then a week later put them on the new stand. There will then be very little unsealed brood, less danger of chilling, and with a larger proportion of young bees there will be less inclination to return to the old stand. As there was no queen in this upper story, the bees will have some feeling of qeenlessness, which will be an advantage.

This is a rough outline, but with your experience you will probably have little trouble in filling out the details.

REPORTS AND EXPERIENCES

Good Report from California

On April 11, Southern California is leading the rest of the State in the amount of rainfall thus far this season—and it is still raining. The prospect is, therefore, good for Southern California at present writing.

GEORGE L. EMERSON.

Fullerton, Calif., April 12.

Bees Wintered Well

I am well pleased with the way my bees wintered being my first winter). I put 29 colonies in the cellar Nov. 20. On March 29, I took them out of the cellar and found I had 26 strong colonies, 2 light and one queenless colony. How is that for a novice?

E. E. TOWNSEND.

Ft. Dodge, Iowa, April 14.

A Two Percent Loss

My loss of bees has been about 2 percent, while some have lost 75 percent. I have, in the last 2 years, adopted a new plan for wintering on the summer stands. I have only 8-frame Langstroth hives; I leave them the super of honey next to the brood-frames, as I have found that an 8-frame hive will not winter a colony in a long and severe winter. I would start with a 10-frame hive if I were to start again.

S. W. SMILEY.

Whiteside, Mo., April 18.

Looking for a Better Year

I thought of discontinuing the Bee Journal because of the discouraging season, but have realized that the Journal is not to blame, and needs our support to continue giving us the much-needed information we seek (as the bee-keeping world) for the future.

I am looking forward for a better year, and wish you success.

MARTIN R. MILLER.

Lancaster Pa., Dec. 5, 1911.

Cause of Bitter Honey

My bees wintered well, and are in good condition, a good supply of pollen being gathered from elm and maple, and all colonies have young bees. There was a good supply of fall honey gathered here from cotton and titi vine. I want to come to your assistance in answering "Arkansas" (page 211 of 1911), "Why Bitter Honey?"

Honey never becomes bitter until about Sept. 15 of each year, or after a weed blooms here which is called bitter weed, ox-eye, or oxidine. Bees do not get any honey from it at all—only pollen—and where it is plentiful, as in this State, Arkansas, Oklahoma, Texas, Mississippi and Georgia, there will be 90 percent of the foragers in a colony working on this weed, which stays in bloom until frost kills it. When it is young and tender, milch cows will eat of it until the milk is almost unfit for use, being very bitter.

Now, the reason that the honey is bitter is because the bees will store it in almost any place in the hive, and in walking over even freshly-built comb, which only a short time before was white comb, or comb capped white, it is changed in color to a golden yellow. This dust seems to ruin all the honey in the hive, and, of course, down here we have to take the honey before the bitter weed blooms, or it is of no use except to the bees.

W. R. CUNNINGHAM.

Rayville, La., March 19.

[By "ox-eye," we suppose our correspondent means the Heliopsis, so called because of the resemblance of the blossom of this plant to a sunflower. It is a perennial plant, and the blossoms terminate the stems or branches. If this is not correct, we trust Mr. Cunningham will give us the description of this flower. The name "oxidine" is probably colloquial, and of local application only, as we can not find it in the reference books.

We would be glad to hear the experience of others on this subject.—EDITOR.]

Recognizing Apiculture

Many persons around here having bees give them so little attention, through indifference and ignorance, that most of that kind of bee-keepers have lost all their bees—some few having found one colony that survived the past two unfavorable seasons.

I am satisfied that the bee-industry never can attain its just recognition for importance to the whole people until we have a branch of apiculture taught in all agricultural colleges and schools where sufficient interest can be obtained to secure a class in that study. In this Northern climate, where the season is so short and the nectar is frequently so bountiful, knowledge must be obtained on how to manipulate the bees to get best results.

Again, our fruit-trees will be almost barren of fruit if there are no bees near to pollenize the blossoms. I have been keeping bees for over 16 years in this locality, and know from observation that it will pay me to keep bees even if I didn't get one pound of surplus honey. I have not failed to have fruit except one year since I have kept bees; that failure was owing to the second winter we had in April, 1910.

It is my intention to make actual observation this season of the difference in fruiting of my trees, and trees of the same size and variety, where there are no bees to pollenize the blossoms.

I believe the time is not far distant when the importance of the bees to horticulture will be more fully recognized; then we may expect the bee-industry to receive its just recognition.

HAMLIN V. POORE.

Bird Island, Minn.

Only Lost One Colony

I have just taken my bees out of the cellar; only lost one out of 29, so I now have 28 colonies, and they are in splendid shape.

W. S. CHAPEL.

North Troy, Vt., April 10.

Hard Blow in Ohio

The bee-business suffered a hard blow in this section the past winter, one man lost his entire apiary of 40 colonies. Last spring I just had 2 colonies, and increased to 6. I saved them all, but 2 of them are weak. I wintered them out-of-doors. I use the chaff hive and a winter case of my own make.

Medina, Ohio, April 15. J. C. MOSGROVE.

Bees Wintered Very Well

Last Saturday I examined the most of my 50 colonies of bees, and think I have lost only 2 colonies. One of them I had my doubts about living when I packed them last October, and the other I think was queenless, and was apparently robbed out recently through the granules of honey on the bottom-board, and only a few bees in the hive.

My bees have had nothing done to them since I left them to go to New Hampshire to live during the winter.

JOHN P. COBURN.

Woburn, Mass., March 25.

Bees Wintered Well

I put my bees in the cellar Nov. 3d, and took them out April 5th. Five months and 2 days in the cellar. They had their last flight Oct. 18th. Five months and 18 days without a flight. And out of 100 colonies I only had 2 dead, and one of them went in queenless, I know. Seventy-five percent of the colonies are *strong*. Twenty-five percent are from medium to light. Yes, I feel good about the way my bees have wintered.

G. C. CHASE.

Robbins, Wis.

Bee-Keeping in Idaho

I have no complaint about bees wintering here, but advancing age is making the care of bees somewhat strenuous for me. March 15th of each year my bees gather pollen from spring beauties, buttercups and willows. Soon there will be carpets of wild forget-me-nots, adder-tongues, etc. Then our dandelions and never-failing snow-drop. Eighty pounds to the colony at 12½ cents for extracted, and 15 cents for comb, helped against the high cost of living. Moths have never eaten an ounce of comb yet for me here.

F. F. GEORGE.

Fraser, Idaho, March 27.

A Little Experience With Bees

I obtained 2 colonies of black bees 3 years ago. I furnished new standard 8-frame hives, and transferred 4 colonies for half of them. I had some little experience before, and read a book on apiculture by James King. But I didn't know enough not to transfer bees as late as July, so my neighbor lost both his colonies. I would have lost mine, too, but for the timely arrival of "Forty Years Among the Bees" and the American Bee Journal; I also sent to Washington and obtained the Farmers' Bulletin on bee-keeping.

I purchased 2 Italian queens, and one was lost in introducing. The next summer I increased to 7, and Italianized them. Last spring I bought 10 colonies. One of them had a fine Italian queen, although the lady from whom I purchased them didn't know that there was any Italian blood in her apiary. I lacked 2 or 3 queens of getting them all Italianized, on account of having very poor luck with my queens—so many were lost. The only reason I could assign was that I had all my hives in a line in pairs, one foot apart, each pair 6 feet from the other pair. Last season I had them set promiscuously.

I lost one colony from starvation, caused, I think, by leaving a lot of supers piled upon it until very late. They had built up into a powerful colony, so much so that the bees could hardly find room in the hive when the supers were taken off. They had consumed all their stores by Jan. 1st, and had died. I found 2 other colonies almost as short of stores, and so I made candy of granulated sugar and placed it on the frames, after first putting 3 or 4 small sticks across under it.

I pack my bees for winter (I winter them outside) by placing empty supers or a hive-body on top; and after spreading on a piece of gunny-sack cut to fit, the super is filled with forest leaves. I could not bring myself to think of sealed covers, with the moisture trickling down upon the bees.

There have been many days of bright, warm sunshine, with heavy snow on the ground, lately, and bees would fly out and perish on the snow. Leaning a board in front of the hive, as per Doolittle, would do little or no good.

Here is a bouquet for Dr. Miller, and a good wish for the American Bee Journal.

Bolivar, Mo., March 8. J. A. REED.

Prospects Fair in California

There will probably be a small surplus of honey in this locality the coming season. Bees are in good shape to take advantage of what honey-flow there may be, having wintered well. The past winter has been exceptionally dry, but we have had a good April rain, which will insure us some honey

I have two apiaries which I run in connection with general farming and stock-raising. We can only figure on a paying honey crop on an average of every other year at the most. 1911 was one of the best honey years ever known in this part of the State. There are still some good locations for apiaries unoccupied in this county at the present time.

If any of the readers of the American Bee Journal would care to know more about this locality, I will be pleased to have them write to me. L. G. SMITH.

San Benito, Calif., April 18.

Loss in Wintering—Short Season Expected

This is the warmest day we have yet had this spring, with the temperature at 45 degrees at noon. My bees are in "Protection" hives, so I hope they pulled through on about 30 pounds of feed each, but farmers to the south of me have lost every colony. Mr. Will McCord has 75 empty hives, and is pretty well discouraged.

Mr. Miles, of Dunlap, writes that he looks for a very short season, as the clover was drouth-killed last year. About here, however, I think I saw a deal of young clover, and I know we had no fall flow. I am looking for a season of heartsease, as the indications are that we shall have a tolerably wet season. A. F. BONNEY.

Buck Grove, Iowa, March 27.

Severe Winter on Bees

We have white clover in bloom during April, May, and part of June here, but the sun beats down so hard in June that it kills it out. The bees reap a harvest when not too cool from the bloom of elm, oak, sweet-gum, maple, peaches, plums wild and tame., pears and apples.

This has been a severe winter on bees, although I have lost only one colony, and it was through trying to catch the queen. She flew away and went into another hive, so pretty soon I found the dead bee. The bees having lost her went into 4 or 5 hives, and then they were killed in a short time.

This year the bees will commence swarming in the early part of April.

The farmers that have bees in box-hives are not bragging, for their bees are nearly all dead.

I am very fond of the American Bee Journal, and take good care of every copy. I enjoy reading what others write.

W. R. CUNNINGHAM.

Rayville, La., March 24.

Cypro-Carniolan Bees

On page 56, the writer uses the term "Cyprian-Carniolan" in referring to Cypro-Carniolan bees.

He says, "Late in September, 1909, I bought a Cyprian queen, but it turned out to be a Cyprian-Carniolan."

He says "there were drones by the thousand—two drones to one worker." That condition indicates that he introduced the queen he bought into a colony having a superabundance of drone-comb, and does not prove the excessive building of drone-comb to be characteristic of the progeny of the queen.

She was introduced in "September," and her bees compelled to accept the drone-comb whether it was their choice or not.

He says, "They are great to rob, etc." Neither the Cyprian nor the Carniolan bees are inclined to rob, and indications are that his queen was a mongrel without knowing what blood predominated. ED L. ROSER.

Cleveland, Ohio.

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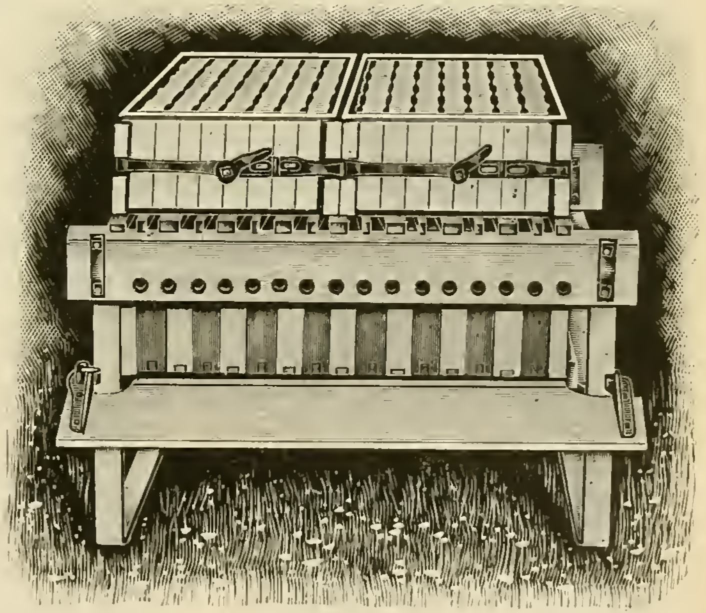

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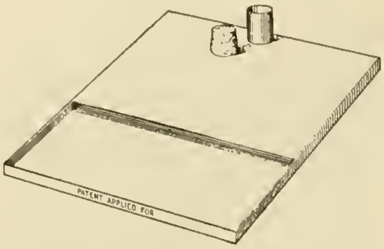
In case of foul brood you can feed medicated syrup and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.



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I am in position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

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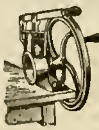

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George W. York
Sandpoint,
Bonner County Idaho

The above is the way to address me hereafter. Soon after this number of the old American Bee Journal has been mailed, Mrs. York and I expect to be located in the beautifully situated town of Sandpoint, Idaho, where I will keep bees, handle bee-literature, conduct a general subscription agency for magazines and farm papers, and possibly be interested in some other things.

I am hoping that the change of climate from Chicago, Ill., to Northern Idaho (70 miles northeast of Spokane, Wash.) will be beneficial to my health, which, especially during recent winters, has not been the best.

Just as soon as possible after getting settled in Sandpoint, I will prepare an illustrated circular for free distribution, and will be pleased to mail a copy to any one requesting it. I hope to have it ready by the last of this month. Any of your patronage that may be turned my way will be greatly appreciated, I assure you.

Although *now* at *Sandpoint, Idaho*, instead of Chicago, Ill., I am the same George W. York, that so many bee-keepers have known in connection with the American Bee Journal for over a quarter of a century.

George W. York,
Publisher and Subscription Agent,
Sandpoint, Bonner Co., Idaho

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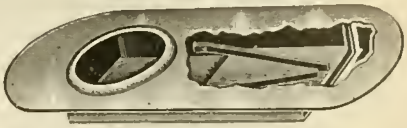

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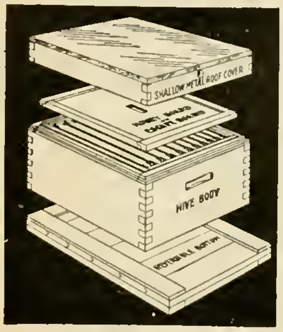

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES, 995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

R. H. Schmidt and his Improved Ideal

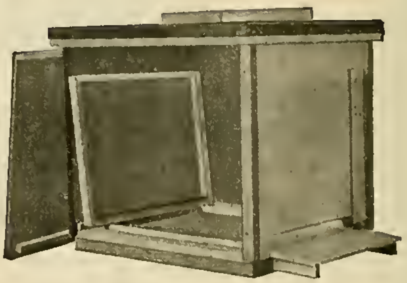
Winter and Summer Case

R. H. Schmidt, Sheboygan, Wis.

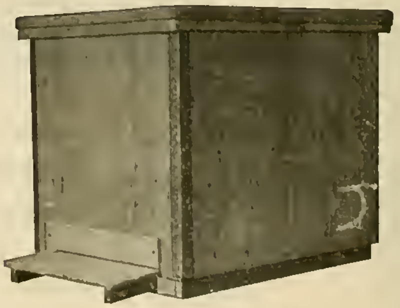
With Patent Feeder arrangement in bottom.

This will make the only complete Winter-Case on the market, as bees can be fed at any time—warm or cold weather is all the same.

One man can feed 100 colonies in 20 minutes, without making any disturbance, or killing a single bee.



Up to 110 in the shade.



Down to 25 below zero.

Send for Descriptive Circular and Price-List.

Address, R. H. Schmidt, Box 209, R. R. No. 3, Sheboygan, Wisconsin.

HONEY AND BEESWAX

CHICAGO, April 22.—The sales of honey during the month of April have been of small volume, hardly up to the normal of the past 10 years. Prices for A No. 1 to fancy grades of comb honey have held steadily at 17@18c per lb., but there was very little of it. The other grades range from 1@5c per lb. less. Dark and mixed comb, also those of irregular shape, or built without separators, have been difficult to dispose of at 10@12c per lb. Extracted honey remains fairly steady in price at from 8@9c per lb. for the white grade, according to kind and quality, with the ambers chiefly at 7c per lb., but some of the fine sages have brought 8c per lb. There is quite a quantity of it being carried over despite the fact that we had a small flow in the neighboring territories during 1911. Beeswax is in good demand at from 30@32c per lb., according to color and and cleanliness. R. A. BURNETT & CO.

INDIANAPOLIS, Apr. 22.—White comb honey sells at 18c per pound in 10-case lots. Amber grades in slow demand and at lower figures. Best extracted sells at 11@12c per pound in 5-gallon cans. Jobbing houses are well supplied, but producers are not now offering any honey. Beeswax is in good demand, and producers are being paid 31c per pound.
WALTER S. POUDER.

CINCINNATI, April 22.—There is very little demand for honey at the present time, nevertheless, for the fancy comb honey we are getting $3.75 a case from the wholesaler, and $4.00 from the retailer. Light amber honey, in large quantities, we are selling at 6½@7½c a lb., and fancy table at from 8½@10c, according to the quantity and quality purchased.

Owing to the great loss of bees, no doubt there will be a fall in the price of beeswax, and only for the choicest wax can we pay 30@32c a pound delivered here in trade.
THE FRED W. MUTH CO.

BOSTON, Apr. 23.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. BLAKE,-LEE CO.

KANSAS CITY, MO., April 22.—The market is almost cleaned up on both comb and extracted honey. We quote: No. 1 white comb, 24-section cases, $3 25; No. 2, $3.00; No. 1 amber, $3 00; No. 2, $2.75. Extracted, white, per pound, 9c; extracted amber, 7½@8c. Beeswax, per lb., 25@28c.
C. C. CLEMONS PRODUCE CO

DENVER, April 22.—We have no comb honey to quote; our market is entirely cleaned up. Our jobbing quotations on white extracted are 9c; light amber, 8c; strained, 6¾@7½c. We pay 26c in cash, and 28c in trade for clean, yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

NEW YORK, April 23.—Our market is practically bare of comb honey, so to speak. Some few little lots still arriving, which have been held back, and find ready sale at from 15@17c for the white, and from 13@14c for amber and light amber, according to quality. Extracted honey still remains very quiet. The demand has not been up to former years ever since the first of January, and we really see no indications for an improvement at this time. Prices remain nominally the same, with very little trade. We sanction fully what Editor Root says in Gleanings in Bee Culture, in the April 15th issue, entitled, "Why Bee-Keepers Should Produce More Comb Honey this Year." The editor is right in what he says: it seems that too much extracted has been produced of late years, and not enough of comb.
HILDRETH & SEGELKEN.

SAN FRANCISCO, Apr. 22.—The demand for honey the past month has been more marked, and there is still a lot unsold. Comb honey, 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6½c. Beeswax, 27½@30c per pound for light in color, and 23@26c for dark. J. C. FROHLIGER.

CINCINNATI, Apr. 22.—The market on comb honey is about cleaned up, and there is a very light demand. It seems the demand has fallen off considerably. White extracted in 60-lb. cans at 10c, light amber in 60-lb. cans at 8½c; there is also a very light demand for extracted. Beeswax in fair demand at $33 per 100 lbs.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

AQUASUN

The flavor of richest apple cider.
A table delicacy that has no equal.
A beverage that refreshes and invigorates.
The strongest health-germs in Nature.

Made from Honey & Water

In any kitchen, at any hour, at a cost of 2 to 4 cents per gallon. Process and right to make it, 25c. Circular Free. 5A12t

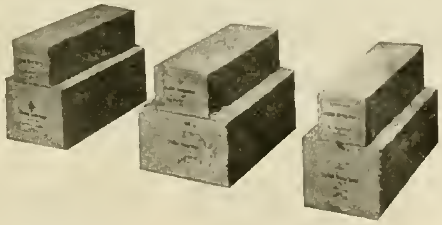
C. W. Dayton, Chatsworth, Calif.

As a Shipping-Point Cincinnati Cannot be Excelled

for this section of the country. We are located on the great trunk lines for points south of us, and orders received from this territory are shipped out at once on direct routes so that customers are assured of prompt service and a minimum charge for transportation.

Coupled with the advantages offered by these resources is the service we maintain for our patrons. At this season of the year our stocks are complete, and we are making effort to handle orders with the greatest dispatch possible, so that there may be absolutely no delays in filling hurry orders. Our long experience in the supply business enables us to anticipate your wants to such an extent that we have included your order with ours to the factory, so we are simply waiting your instructions to get them started to you.

For the small bee-keeper, and those who have a part of the supplies they will need for the coming season, we have goods put up in small original packages. For instance, there is foundation of all grades packed at the factory in one, two, three, four and five pound cartons. Sections of all standard sizes in cartons of 100, 250, and boxes of 500. These small packages enable the bee-keeper to buy in quantities just suited to his needs, with the assurance that the goods will reach him in the best condition possible, and with no loss on account of a broken package.



If you have lost some bees the past winter, don't be discouraged, but prepare to make the very most of those you have left, or to replenish your hives, for the coming season is bound to be a good one; and if there has been quite a loss in your vicinity there will be all the more nectar for your bees to gather. Be sure that the season finds you prepared to give them plenty of room in which to store the harvest when it comes.

If you haven't had your catalog from us, there is one ready to mail if you'll give us your present address.

C. H. W. Weber & Co. 2146 Central Ave., Cincinnati, O.

Removal Notice: Chicago "falcon" Branch

Owing to the removal of our Chicago Manager, Mr. York, who is locating in Northern Idaho, Mr. H. S. Duby, of St. Anne, Ill., just south of Chicago, takes charge of our Branch matters in addition to his present line of bee and poultry supplies. All mail which has been addressed to our Branch at 117 North Jefferson Street, is forwarded by main Chicago Office and received in St. Anne by Mr. Duby, as soon as the carrier would deliver in Chicago. So no time will be lost in filling your orders. St. Anne, Ill., is at the junction of the Chicago & Eastern Illinois Railway and the Big Four Division of the New York Central Railway systems, affording the fastest deliveries with lowest freight rates. Send your orders to

H. S. DUBY, ST. ANNE, ILL.

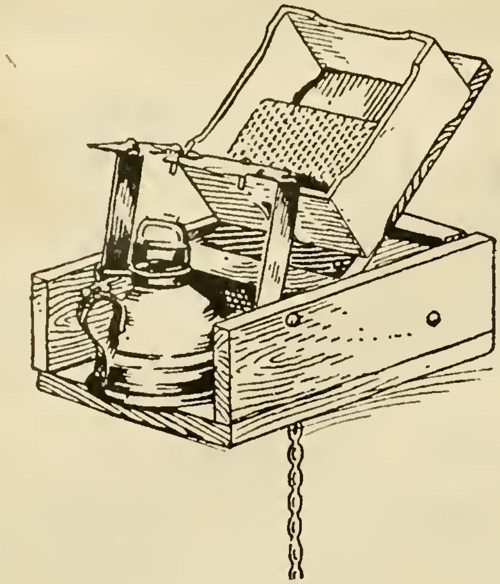
And any letters mailed in our Chicago addressed envelopes will be delivered to St. Anne immediately.

The "falcon" Factory

manufactures a full line of dovetailed and double-walled Hives, Supers, Sections, Foundation, and all necessary implements at Falconer, N.Y.

If you do not have a copy of our RED CATALOG—the only logically arranged catalog ever published—and the easiest from which to order, drop us or our nearest dealer a card.

Our distributers are located all over this and all foreign countries, and the name of nearest one is gladly supplied.



Dewey Foundation Fasterer — the most practical, common-sense Foundation Fastener made.

Price, $1.25 ; by mail, $1.50.

W. T. Falconer Mfg. Company, Falconer, N. Y.

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
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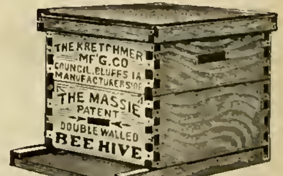
H. S. Duby, St. Anne, Ill.

The "Massie" Bee-Hives



We consider these the **Best Up-to-date Hives** made.
Double - Walled, made of full thickness of lumber, same Super capacity as a 10-fr. Dov. hive, and of the same price. **Send for FREE Illustrated Descriptive List.**

BEE-SUPPLIES

We furnish Everything Needed in Practical, Profitabe Bee Culture

We manufacture the Dovetailed and Massie Hives with either the

Scalloped Supers Plain Section Supers or Extracting Supers

We have millions of as nice SECTIONS as are to be found in the market, either scalloped or plain, of all the STANDARD sizes. All of our Foundation is made by the

NEW WEED PROCESS

From strictly pure wax. None better.

Our Large Illustrated Catalog is Furnished Free to All Bee-Keepers or Dealers. Write Us for Special Prices. No Trouble to Answer Inquiries.

It describes and illustrates numerous money-saving and money-making devices, tried in our own apiaries before offering them to the public. Write at once for a copy of our Catalog. Our prices are the lowest, the quality of our goods equal to the best; a trial will prove our assertion.

Established 1864. **KRETCHMER MFG. CO., Council Bluffs, Iowa.**

AMERICAN BEE JOURNAL

JUNE 1912

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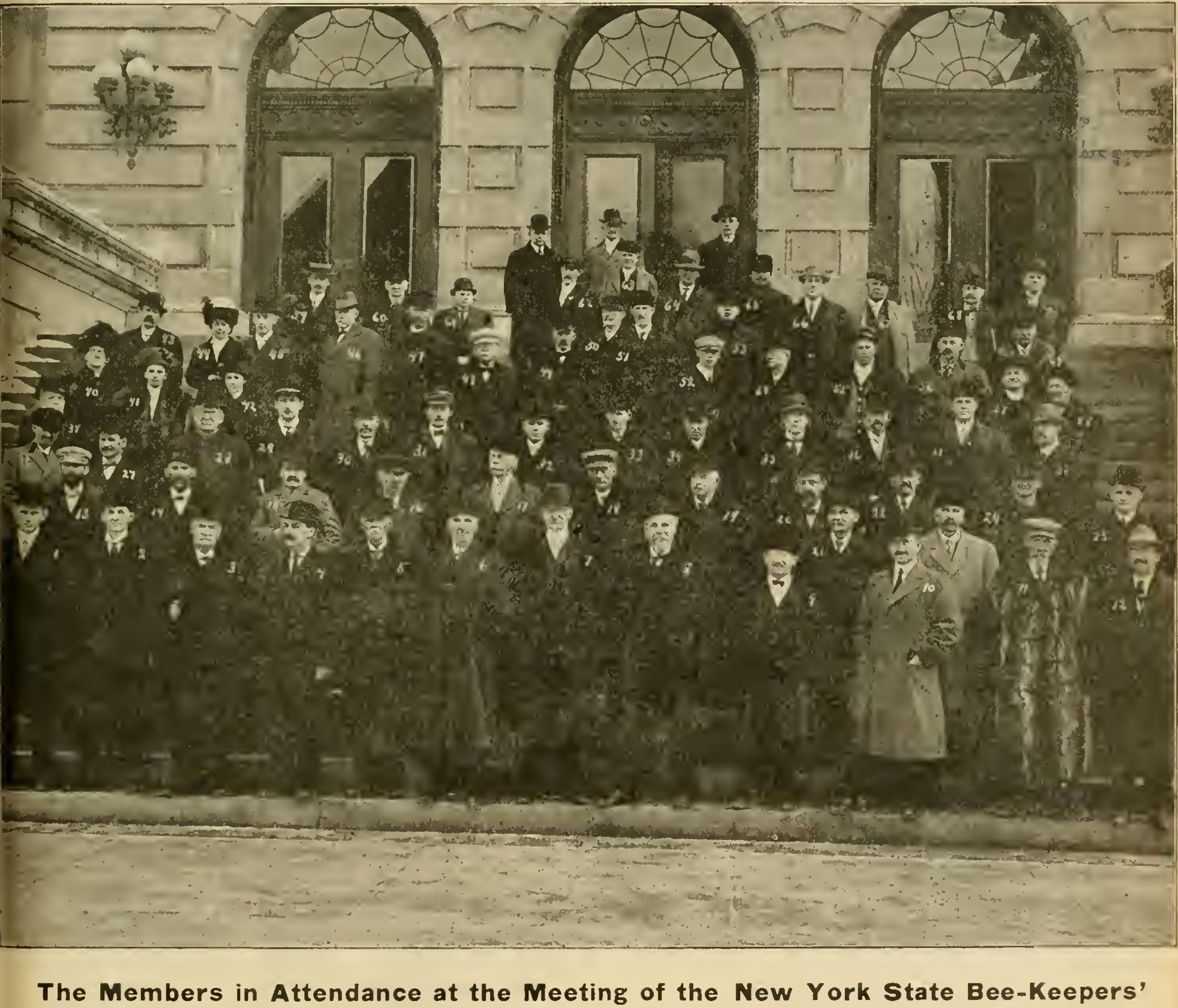

The Members in Attendance at the Meeting of the New York State Bee-Keepers' Association, Held at Syracuse, N. Y., Jan. 30 and 31, 1912

1. Irving Kenyon, 2. E. B. Tyrrell, 3. N. D. West, 4. Chas. Stewart, 5. M. Stevens, 6. Geo. B. Howe, 7. Oscar Dines, 8. Prof. H. A. Surface, 9. Jacob Gilcher, 10. H. D. Hardy, 11. Mr. Elthorp, 12. Dr. C. G. Scharm, 13. C. J. Baldridge, 14. W. F. Milliard, 15. Geo. Fairchild, 16. B. Bailey, 17. J. E. Lloyd, 18. F. C. Hutchins, 19. ——, 20. J. M. Quick, 21. F. Greiner, 22. H.L. Case,. 23 A. A. French, 24. ——, 25. W. Fritz, 26. ——, 27. S. D. House, 28. J. M. Morgan, 29. C. B. Loomis, 30. B. Hall, 31. D. Johnson, 32. Fred Mason, 33. E. Reddout, 34. B. Rout, 35. Dr. G. B. Cowan, 36. A. J. Brewer, 37. ——, 38. G. A. Dakin, 39. Mrs. N. N. Betsinger, 40. Mrs. S. D. House, 41. Miss Daisy Stone, 42. Mrs. Davey, 43. Fred Loucks, 44. Mrs. Fred Loucks, 45. Dr. Davey, 46. John Cunningham, 47. Wm. Schuelke, 48. P. G. Clark, 49. Wm. Tripp, 50. W. F. Marks, 51. ——, 52. ——, 52. ——, 54. G. F. Ransom, 55. ——, 56. ——, 57. Geo. Davis, 58. W. L. Coggshall, 59. Dr. W. F. Eagle, 60. Herman Fairchild, 61. Chas. L. Wardwell, 62. Chas. B. Allen, 63. Martin Schuelke, 64. Austin Clark, 65. ——, 66. F. W. Lesser, 67. Chas. Doxtater.

Report of this meeting is given on page 179 of this issue. Those in attendance agree that it v one of the most interesting meetings ever held by the bee-keepers of the Empire State

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
George W. York & Company,
1st Nat'l Bank Bldg. Hamilton, Illinois

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National Bee-Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

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Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized. Send Dues to the Secretary, E. B. Tyrrell.

BEE-KEEPERS

Look up your stock at once and send me a list of the supplies you need. I have a large stock to draw from to handle your orders for Hives, Sections, Comb Foundation, etc.; standard goods with latest improvements fresh from the factory at factory schedule of prices. I have a general line of **Root's Goods** constantly on hand. My facilities for serving you are unequalled. **Beeswax** taken in exchange for supplies or cash.

Italian Bees and Queens

Be sure you have my 1912 Catalog of Bees, Queens and Supplies. 5A3t

MARL M. NICHOLS, Lyonsville, Mass.

Queens That "Are better"—Italians & Banats

Untested Queens, 75c each; $8.00 per doz.; two or more doz. in one order, $7.50 per doz.
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5c each extra.

½-lb. Packages of Bees after May 1st, $2.00. Select queen wanted and add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-Frame Nuclei, with Untested Queen, $2.00 each; 2-fr., $3.00; 3-fr., $4.00. Full Colony of Bees in 10-fr. hive, $7.00. Add 50c if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For 10 or more Colonies or Nuclei, deduct 25c each.

I have successfully shipped Bees and Queens from this place every month of the year. I started two colonies Jan. 25th on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at The Cotton Palace, in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are Cash with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

I have seven yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas.

Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG

Will tell you all about our

Best Bee-Keepers' & Poultry Supplies

Sold at lowest living prices. We handle the Best Sections in the World—the August Lotz Sections at Lotz prices. **Three Carloads** of Goods on hand with 2 more coming.

Drop us a card and we can please you.

Catalog Free. **H. S. Duby, St. Anne, Ill.**

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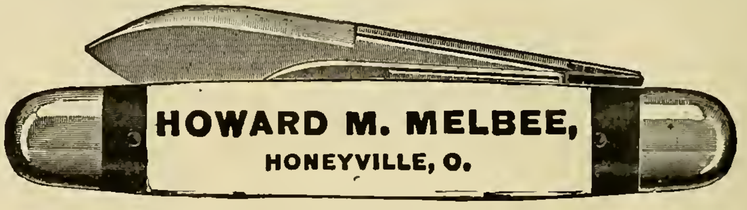
BEE-KEEPER'S NOVELTY POCKET-KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

Bees Require Up-To-Date WORKSHOPS

Muth's Special and **Ideal Metal-Covered** Dovetailed Hives are bought by the practical bee-keeper. Honey-board and all regular fixtures with each hive; finest lumber and workmanship used in the manufacture of our hives. Fully illustrated in our big Catalog. Send for it today.

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"The Busy Bee Men"
51 Walnut Street, CINCINNATI, OHIO

We Pay the Highest Cash Market Price For Honey and Beeswax Always

George W. York
Sandpoint, Bonner County Idaho

This is May 21st, and I am getting settled as rapidly as possible here in Northern Idaho. In another week I will be ready to do business again.

While I will make the handling of bee-literature a specialty, I will also take subscriptions for any other publications. Write me what you would like, and I will be glad to quote you some attractive prices.

A Few Special Offers.

American Bee Journal one year ($1.00) with either "First Lessons in Bee-Keeping" (50c), or Doolittle's "Scientific Queen-Rearing" (50c), for only $1.00; or the American Bee Journal a year with **both** of the books mentioned—all postpaid for only $1.40.

If you prefer, you can have either Gleanings in Bee Culture or the Bee-Keepers' Review for a year instead of the American Bee Journal in the above special offer; or, if you want both books and any **two** of the three bee-papers, send $2.20; or if you want both books and all three bee-papers for one year, send $2.90.

Send for my free circular of other special offers.

White Sweet Clover Seed

I have a quantity of White Sweet Clover Seed in Chicago, Ill., which I will sell at the following low prices so ong as it lasts, all orders to be sent to me here at Sandpoint, Idaho:

5 lbs. for 80c; 10 lbs. for $1.50; 25 lbs. for $3.50; 50 lbs. for $6.50; or 100 lbs. for $12.00.

If wanted by freight, add 25c for cartage on your order.

A GOOD COUNTRY FOR BEES.

I am told by local bee-keepers that this is one of the best localities for bees, and there is much unoccupied territory here in Northern Idaho. If interested, ask for particulars. Address

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
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Please mention Am. Bee Journal when writing.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co, Kan, July 15. A. W. SWAN.

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22 CHAS. MITCHELL

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W YORK & CO.:—The queen I received of you a few days ago came through O. K. and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

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BEE-KEEPERS:—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

When You Buy Lewis Beeware You Get

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine bright basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched over by experts. The Lewis head mechanic has 35 years of bee-supply experience; the superintendent of bee-hive department 29 years; the superintendent of sections 28 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed — a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

G. B. LEWIS CO., MANUFACTURERS OF BEEWARE **WATERTOWN, WIS.**

If BEES could TALK

THEY WOULD SAY:

"GIVE US DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

AMERICAN
BEE JOURNAL

Published Monthly at $1.00 a Year, by George W. York & Company, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JUNE, 1912

Vol. LII---No. 6

EDITORIAL COMMENTS

Agricultural Colleges and Bee-Keeping

We call the attention of our readers to the articles of Messrs. Wesley Foster and L. V. France in this number, on the above subject. They are both young men, and both see the necessity of educational courses in bee-keeping. The time for urging apiculture upon all our State Agricultural Colleges is at hand.

Already in 1911, when the bee-keepers of Illinois called upon Gov. Deneen for his consideration of the foul brood bill, he made the remark that the State Agricultural College ought to have a teacher of apiculture and an experiment station. The Illinois State Association was unprepared for a step of this kind, hence nothing was done outside of securing the foul brood law and State bee-keepers' appropriation. But the work is before us, and we must unite and put our shoulder to the wheel. We will get the apicultural schools without much difficulty if we use our energies in that direction. The next 10 years ought to see a revolution in methods among the masses, in this industry.

Demaree Plan of Swarm-Prevention

Geo. W. Rich writes that a non-swarming race of bees is against Nature, since everything is created to increase, and that the only thing that can be done is to keep bees from getting into a condition that gives them the desire to swarm. This he accomplishes by raising half the brood above an excluder, when 4 to 5 frames of brood are in the brood-chamber, inserting empty combs into the brood-chamber in place of the brood that is raised above.

This is a variation of the Demaree plan. Some years ago G. W. Demaree, a Kentuckian, gave to bee-keepers a plan for prevention of swarming that with many has proved an entire success, although with a few the success has been only partial. The plan is simple. When a colony becomes strong, and before it has started too far on the road to swarming, put all the brood into an upper story, having an excluder between the two stories, the queen being left below the excluder in the lower story, which is filled with drawn combs or frames filled with foundation. That's all; the bees do the rest.

The bees have an empty brood-chamber, and are thus left in much the same condition as a natural swarm, while the brood over the excluder will be hatching out, and as fast as the brood hatches out the empty cells will be filled with honey, thus gradually changing these combs into extracting combs.

In some cases the bees have shown some aversion to occupying the empty brood-chamber, and on that account it may be well to leave in the lower story one of the old frames, perhaps one with little or no brood.

University Recognizes Bee-Culture

The Wisconsin Agricultural College has decided to introduce an elective course in bee-culture, to begin about Feb. 15, 1913. It is to be under the direction of Prof. J. G. Sanders, of the College of Agriculture. This information is supplied to us by Mr. L. V. France, son of the well-known N. E. France. The Frances have evidently been influential in securing recognition for bee-culture.

A Bee Journal for the National

We are informed that the National Bee-Keepers' Association has purchased the Bee-Keepers' Review, which will hereafter be published as the official organ of this corporation. In this, America only follows the lead of other National bee-associations. France, Italy, and Germany have their National organs, as well as other minor association journals. With E. B. Tyrrell as editor, the new departure will surely be a success. Mr. Tyrrell is young, capable, and wide-awake.

We have been asked whether we did not think that this new arrangement would be injurious to other bee-papers. We see no reason why it should be. The publisher of a bee-periodical ought to make his paper worth more than $1 to its readers. If we can not make the American Bee Journal sufficiently interesting to make it worth twice its cost, we ought to quit.

Regulations Concerning the Mailing of Queens

On March 23, 1912, the following ruling was made by the Post-Office Department concerning matter that could be accepted in the mails:

> "Queen bees, and their attendant bees, when accompanied by a certificate from a State or Government inspector that they have been inspected and found free of disease."

Realizing that this ruling was impracticable, since it is impossible for any one to know by examination of a queen whether her brood would be free from disease, and also since there are no provisions made by the Government, or by many of the States for inspection of bees throughout the country, we wrote to Dr. Phillips, In Charge of Apiculture at the Department of Agriculture, who answered at once that they were taking steps to have a more practical ruling substituted. This ruling, just received, is now in force; it reads:

> "Queen bees, and their attendant bees, when accompanied by a copy of a certificate of the current year from a State or Government apiary inspector to the effect that the apiary from which said queen-bees are shipped is free from disease, or by a copy of a statement by the bee-keeper made before a notary public or other officer having a seal that the honey used in making the candy used in the queen-mailing cage has been diluted and boiled in a closed vessel."

Dr. Phillips deserves the thanks of the queen-breeders for securing this change promptly.

Until an efficient and entirely equitable method of inspecting every queen-dealers' apiary can be devised, the above ruling is certainly the most practical. It is of the utmost importance that no tainted honey be used in the mailing of queens.

By the way, we have a statement from Mr. O. F. Fuller, of Blackstone, Mass., saying that he has been making candy for queen-cages without the use of any honey whatever. If this method is practical it ought to prevail. We have for years made candy for winter food without any honey, and it has served the purpose well.

Easy Plan of Introduction

Wesley Foster gives in the Bee-Keepers' Review the following easy and rapid plan for introducing a queen:

> "Going to the hive I wish to requeen I find the old queen and kill her, then take two of the combs with the most young bees, and hatching bees on them, putting them at one side of the hive, with the division-board between them and the main cluster of bees. If there are no old bees on these combs to speak of, I then run the new queen right in on these combs of hatching bees.
>
> "So far I have not lost one in 20 of the queens, and in 48 hours I come around and remove the division-board, readjusting the brood-nest as I wish it to be. In many a hive I just pull out a comb of bees and brood after disposing of the old queen, and turn my new queen loose on the comb before my eyes. If the bees are quiet, and the queen not nervous, everything will be all right, but should anything unusual appear in the bees' manner toward the queen, I resort to the isolation of the queen on the combs of hatching brood."

Even though coming from so good an authority as Wesley Foster, it is a little difficult to believe that with such an apparently reckless plan the losses would not be greater than one in 20. But the gain in time and trouble is so great that the plan is well worth a trial.

European Foul Brood Versus Pickled Brood

The correspondence in the May number concerning the above subject, is causing considerable comment. Numerous protests have been received against the assertion of Mr. McEvoy, that 90 percent of the so-called European foul brood is nothing but starved brood. We want to hear from those who have had experience. There are three points to determine by practical bee-keepers:

1. Are the descriptions given of the differentiation in appearance of the two diseases correct? If not, where is the discrepancy?

2. Is European foul brood cured generally by italianizing the colony?

3. Is pickled brood diseased or only starved?

Messrs. Kildow and Pyles stopped one day with the Editor upon their return from a tour of inspection in southern Illinois. They will have something to say, but are too busy at present. They assert that European foul brood is gaining ground.

We received, at the last minute, Bulletin No. 157, from the Department of Agriculture, on "The Cause of European Foul Brood," by Prof. G. F. White. This distinguished bacteriologist affirms the discovery of a new bacillus, "bacillus pluton," which he considers as the "primary exciting cause of a brood disease." Incidentally he indicates that he does not consider "pickled brood" as starved brood. He designates it as "an apparently non-infectious disorder, the exciting cause of which is not yet known."

On the other hand, Dr. E. F. Phillips calls our attention to Bulletin No. 442, of the Department of Agriculture, in which he gives a description of all brood diseases. His description of pickled brood differs but little of that given in the May number. Here it is:

> "The most typical form kills the larva when it has extended itself in the cell. It usually lies on its back with the head turned upward. The color varies, but is frequently light yellow or brown, and the head is often almost black. The body is swollen, and the contents watery, and the head may be quite hard. There is no ropiness. In case the larvæ are sealed before dying, the cappings are usually normal."

The important point is to inform the average apiarist of the description of each of the diseases, so that there may not be errors made and colonies treated by radical methods for a harmless trouble.

Information wanted! Give us both facts and opinions.

What Kind of a Hive Does Mr. Scholl Use?

On page 140, there seems to be some misunderstanding about the kind of hive friend Scholl uses. Let's see if we can not straighten out the tangle. You wonder, friend Scholl, that any one should think you advocate a shallow hive, and say that you "have been advocating for more than 15 years a *deeper* hive than the Langstroth." May be; but I think one reading that article on page 47, the one to which I referred in what you call my attempted "swat," would be excused for thinking that you use shallow hives.

The first sentence tells us that you are answering inquiries about "shallow, divisible brood-chamber hives." That hardly sounds like deep hives. Then a little farther along you say, "Presuming that the readers know that we use the *10-frame* hive.........frames 5⅜ inches deep." Neither does a 10-frame hive with frames 5⅜ deep sound like a deep hive. Looking hastily through the rest of the article, I don't see any place in it where you mention using a deep hive.

But that only goes to show that it isn't always easy to use the English language so as to be properly understood. I'm sure it's so in my case; but then you have the advantage over me, for when you can not make yourself understood in English you can say it in German. I wish I could.

To come right down to it, I didn't suppose you did use a shallow hive—except sometimes. I supposed you used a hive of two stories, each story containing 10 shallow frames, except that sometimes you used only a single story, and if I am correct in thinking that sometimes you used only a single story, then at such times you do use a shallow hive, don't you? But mostly you use a hive deeper than the Langstroth.

But honest, now, Louis, do you really think I deserve to be swatted for accusing you of claiming that the depth of a *hive* should be 3¾ inches shallower than the Langstroth. Please look again at page 102, and you will see that I said you wanted the *frame* to be 3¾ inches shallower than the Langstroth.

Well, now that we're friends again, what is really the hive you use? Should it be called a "deep 20-frame hive," or what?

Anyhow, I wish you a big crop of honey in your hives, whatever the name. C. C. M.

Variation in Sections

One of the things not always taken into consideration is the variation in the weight of sections due to differences in seasons and honey-flows—perhaps one might also say to differences in localities. Every now and again some one is possessed with the idea that a size of section should be adopted, that, when filled, should weigh exactly a pound. Such a thing is an utter impossibility. Suppose such a section tentatively adopted, and used in a given apiary for the year's crop. If the harvest starts with a good flow, and the first sections taken off comply with requirements as to weight, it by no means follows that those taken off near the close of the flow will have the same weight. These latter, even if apparently well filled and finished, may average an ounce or more less in weight than their predecessors.

We may, however, have sections of such size that the average of the entire season shall be just right as to weight. Let this happen in an unusually good season with a heavy flow, and let the next season be a poor one with light and intermittent flows. It will be found in this poorer season that the average will be materially less than in the previous good year, the difference being more than an ounce per section.

Even in the same year, and in the same apiary, the sections from one colony may be lighter than the sections from another colony, perhaps because one colony is weaker than the other; possibly because of a difference in the bees aside from the matter of strength. The management of the bee-keeper may make a difference. If he keeps one colony crowded for room, and gives another abundance of empty sections, both colonies being of equal strength, he may count on sections of materially heavier weight from the crowded colony. Some races of bees fill the sections better than other races.

Altogether this matter of variation in the weight of sections is of serious importance, and it must be reckoned with.

Holding Interest in Conventions

Speaking on this subject, the editor of the Bee-Keepers' Review says:

> "Personally, I find that the regular conventions, where the mass of bee-keepers attend ,should be devoted mainly to discussing currrent topics of bee-keeping. These should be selected with a view to bringing out discussions from all present, and must be questions they are all interested in. The business, on the other hand, can be best done by delegates, which session should be held apart from the others so that they will not interfere with the regular program. Byer is right in believing that too much business can be injected into a regular bee-keepers' convention."

It does seem too bad to have the time of all the members taken up with a matter of business that can just as well be done by a small number; yet there are two sides to the question. If the amount of business be so small that it can be done outside the regular times of the sessions without overburdening those who have the business in charge, well and good. But if the business must be done at the regular time of the meetings, then there are two dangers; one is that the business committee may be in haste to get to the bee-discussions, and so slight the business on hand. The other is that the withdrawal of some of the most efficient members will detract from the interest of the general sessions. Of course, it is easier to find fault than to suggest the remedy.

Timely Hints for June

When the bees whiten the upper edge of their combs, unless it is in a short flow like fruit-bloom, put on your supers or get ready to harvest swarms.

Always have some empty hives with frames fastened in proper position, and with either starters or sheets of foundation, ready for swarms. It is poor policy to wait until the swarm is hanging to the limb.

If you have plenty of old combs from dead colonies, this is the time to use them. Better make divisions with them, for if you furnish them to strong swarms they may fill them full of honey and leave no room for their queen to lay. In this way they do more damage than good. There is, however, one way to furnish them to natural swarms in a profitable way, it is to supply them in sufficient quantities—say two full stories—that the bees may have room for both a large crop of honey and breeding cells. It is then that you will find how much more honey may be produced with combs already built.

Do not give natural swarms part built combs and part empty space, for they will then be induced to build a large amount of drone comb. Either give them all empty space or all built combs or foundation.

When strong colonies cluster on the outside, they are either crowded for room or too hot. Give them more room, more shade, or more ventilation, or perhaps some of each.

Ants often make their nest over the brood-chamber, in a warm place above the bees and out of their reach. You can effectually get rid of them by putting in that space a little powdered sulphur, or a little fine salt, or a little dry, wood ashes. A sheet of newspaper stained with coal oil or with carbolic acid will also frighten them away, but these substances must not be used anywhere near a super of honey, for they will taint it. Ants do no harm, outside of the annoyance they give the bee-keeper when opening hives.

When you insert a queen into a queen-cage, let her *crawl up* into it. You will rarely get a queen to *crawl down* out of your hand into a cage.

When a swarm has emerged and is sporting in the air preparatory to settling, you may be unable to know from which hive it has issued, unless you look closely in front of each suspected colony. Very young bees, which are yet unable to fly, are always carried out by the rush, and you will find a number of them almost invariably in front of the parent colony, crawling back home with difficulty.

Empty hives, properly prepared beforehand, are often pre-empted by natural swarms, especially if placed in some elevated position. A friend in southern California caught so many in this way, in one season, that he will not let us tell how many, for fear of disbelief.

Grading Rules for Comb Honey

The Bee-Keepers' Review has tackled the subject of the grading of comb honey with the idea of having a uniform system of grading throughout the whole country. Over its honey quotations it has been printing pictures of 3 sections. The first shows the poorest that should be admitted in the fancy grade, the second the same as to No. 1 grade, and the third as to No. 2 grade. Editor Tyrrell has sent out inquiries to leading buyers and producers as to their views on the matter, and it turns out as he had expected, that "there is no uniform interpretation of even the grading rules we have had." The buyers were asked whether they would accept shipments of honey with no sections poorer than the ones pictured in their respective classes. Some of the replies have been published.

Blake-Lee Co. would accept such shipments as satisfactory. R. A. Burnett & Co. would want something better in all three cases. C. C. Clemons Produce Co. are not in favor of having a fancy grade; "the opportunities are too great for rejecting a car if the market was not just right, and after making a fancy grade you have left only an ordinary grade of No. 1 and a very poor grade of No. 2." They would include the first two under No. 1, with some question as to whether the No. 2 should not be classed as No. 3. Apparently, however, they are considering the pictures as representing the average instead of the poorest in each class, for they say, "The third is not a very good No. 2, and a carload all like that would hardly pass for No. 2."

Hildreth & Segelken stipulate that 24 combs of fancy should average 23 pounds net, No. 1 from 21 to 23 pounds, and No. 2 not less than from 19 to 20 pounds. So far from rejecting the sample of fancy as too poor for the very poorest in that class, as do Burnett & Co., they say they would be only too glad to receive *all* combs as good.

However laudable may be the undertaking, the evident desire of Editor Tyrrell to bring about such a uniform understanding about grading as to establish a National market is a desire not to be consummated without difficulty. One can but wish him well while watching further developments.

Stimulative Feeding in Spring

What is called stimulative feeding is not always stimulative. It is sometimes destructive. There seems to be a growing belief that when a colony has abundance of stores in the hive, additional feeding by no means always results in increased brood-rearing. J. L. Byer says in the Bee-Keepers' Review:

> "Given a good, prolific queen in the hive, abundance of good stores, and the colony having wintered in good condition, what can stimulating by feeding do to better the condition of said colony during the latter part of March and all of April, owing to the very uncertain weather changing from cold to warm, and *vice versa*—this kind of weather often continuing during the first week of May? Is it not the general experience that colonies at that time do not suffer for want of *brood*, but rather from want of *bees* to take care of the brood there may be in the hives?"

Price of Honey in South Africa

Complaint is made in the South African Bee-Keepers' Journal of the market being deluged with honey, good honey being sold for 25 cents a pound, and some reported even down to 16 cents. They seem to be harder to satisfy in the matter of prices in South Africa than in this country.

MISCELLANEOUS NEWS ITEMS

A Case of Grit.—John F. Otto is a successful Wisconsin bee-keeper, who, for the past 10 or 12 years, has wintered each winter about 300 colonies, reducing the number to 175 or 200 to get them strong for the honey-flow. In the Bee-Keepers' Review he tells about some of the struggles in the earlier part of his career. An indoor life did not agree with him, so he sold out, intending to devote himself to bee-keeping. To the 25 colonies on hand he added 12 more by purchase, putting into the cellar 37 colonies. The following spring the original 25 were all in good condition, while the purchased 12 were all dead. Nothing daunted, he bought 25 more colonies, and started the season with 50 colonies. He says:

"The next fall I had 114 colonies rotten with foul brood, as rotten as they could be; some had only a handful of bees. I noticed during all the summer that there was something wrong with my bees, but did not know what, until in the fall, when I subscribed for the American Bee Journal, and reading an item on foul brood, I knew what was the matter with my bees. The next spring I got two books on foul brood, and in the latter part of May I began to cure them. In the fall of that year I had 56 colonies in good condition, but 3 of them still had a few foul cells. I left them until next year.

"It took me just 5 years before I had the disease completely rooted out. It was not due to my carelessness in cur-

FOOLED—NO BEES THERE.

ing them, but when those 12 colonies died, in the spring of that year, I gave my bees a chance to clean up the combs from those colonies, and all the neighbors' bees had a hand in it, and you certainly know what that meant, and what effect that had on my yard in the future. But still I did not get discouraged; I was determined to make a success in the business, and so I did."

◆

New Irrigated Regions.—S. King Clover has been in the Yakima Valley since 1904, all the while actively engaged in bee-culture, and in the Bee-Keepers' Review sounds a warning against the idea of rushing into the new fields opened up by irrigation with the expectation of making a fortune at bee-keeping. The railroads and others paint in glowing colors the advantages in these new places, but say less about the drawbacks. Among other things he says:

"Those of you who have your cosy homes where God waters the land with the rain, where you have good water to drink, plenty of fuel, your friends, think twice before you sacrifice your homes to go to a laod and a condition you know little about, devoid of the improvements afforded by older settlements, and old, established society; those of you who appreciate even a garden of vegetables, beware of these irrigated districts.

The railroads have no other object in enticing you West than to convey you out here at so much per head, the same as other merchandise. It is a money-making scheme, like other schemes. They have no interest in you after you are once here, unless you wish to go back East. Irresponsible bee-keepers frequently give glowing reports to the press for publication, which are far from the truth. The real-estate agents are on the alert for just such articles, and they are widely published.

◆

Fraudulent Packing.—It seems that the traffic in bulk comb honey is not without its perils. The following occurs in the excellent bee-bulletin of Texas:

A deceptive method of packing bulk comb honey has recently come to our attention, and it can not be too strongly condemned, both by customers and honest bee-keepers. As explained on a preceding page, bulk comb honey, when properly packed, consists of cans filled *full* of *comb* honey, the latter cut into just as large pieces as will go into the can. What few openings *then* remain are filled with extracted honey.

Some bee-keepers have, however, adopted the plan of filling the honey cans *only about one-third full* of comb and then filling up the can with extracted honey. Of course, the pieces of comb float on top of the extracted honey, and when the customer takes off the cover the can *appears* to be filled with comb honey. The deception is not discovered until the customer has purchased the can and used out about a fourth of its contents. Such a deception is little short of actual fraud, for bulk comb honey usually sells at 2 to 5 cents per pound higher than extracted, and when the customer pays the higher price for bulk comb he is certainly entitled to it, not to a mixture containing 75 percent of a lower priced honey.

◆

Western Honey-Producers Change Location.—The Western Honey-Producers' Association have moved their headquarters from Salix, Iowa, to Sioux City, Iowa, where they will conduct their honey business on a larger scale. For the last five years their honey-packing plant has been at Salix, under the management of W. P. Southworth. Thomas Chantry and Edward G. Brown, officers of this Association, have made bee-culture their life work, and are careful to locate their apiaries in localities that yield the choicest nectar. Their method of thoroughly ripening the honey in the hive and removing it with scientific care adds to the superiority of their product.

This move makes Sioux City a honey market, and will materially assist the bee-keepers of the surrounding country in disposing of their product readily.

◆

Cow-Dung for Smoke.—Nothing new about that. Yet sometimes some of the old things, that by some means have been set aside and forgotten, are worth reconsidering. H. Martin, in the South African Bee-Keepers' Journal, has this good word to say for cow-dung as smoker fuel:

"After a test of over five years I have come to the conclusion that it would be very difficult to beat ordinary *thoroughly* dried cow-dung as a smoker fuel. I wonder how many bee-keepers have tried it, or if they have found it satisfactory. The advantages are that it is a very agreeable smoke to the operator and effective on the bees; when once alight it will not go out until the last pick is reduced to ashes, even if the smoker is left aside and not used; it occupies a small compass, and a well-filled smoker will give forth smoke longer than any other fuel I know of. Often has my smoker been found alight and fuming merrily away four hours after it had been put away to one side. To bee-keepers who have had trouble in this respect, I should strongly recommend a fair trial. To light up, about half fill the smoker with small pieces of well-dried cow-dung; go to the kitchen stove and drop a glowing ember on top of these, adding a few more small lumps of this variety of fuel. You will now have a smoker upon which you can rely. If there is no fire available, it will be necessary to set fire to the cow-dung by the aid of some more inflammable material, such as shavings or dried wood; a little paraffin or methylated spirit dropped on to the cow-dung is even better."

◆

A Hot Bee-Sting.—On May 13th, J. A. Simmons, a queen-breeder of Sabinal, Tex., while replacing extracting combs on a hive of bees, was bitten by a snake, which the local Mexicans call "bee-water." Mr. Simmons says that, at the time, he thought it the hottest bee-sting he had ever endured. After trying a few of the popular remedies, a physician was sent for. Mr. Simmons reports himself as doing well, though still propped up in bed.

◆

Winter and Bees in Switzerland.—The editor of the Bulletin Suisse writes us:

We are having a mild winter. From Feb. 2 to 10, there was no frost, the land has become green, and there have been flowers. But, strange to say, the few white frosts which we have had since, have done more harm than the coldest winter weather would do. The esparcet is parched, and some plants which can stand a temperature of zero have greatly suffered. The bees have wintered finely, we had no losses, but if the winter had been cold there would be great losses, for the quality of the stores was inferior. The bees are very far along, and at this date we have colonies with 6 combs of brood. It is rather too much, as a return of cold weather would injure it.

ULRICH GUBLER.

Belmont, Switzerland, March 20.

◆

Coated Nails for Shipping-Cases.—At the Wisconsin State Bee-Keepers' convention in February last, criticisms were made of the use of cement-coated nails in fastening on the covers of shipping-cases for comb honey. Mr. Frank Rauchfuss, the efficient secretary of the Colorado Honey-Producers' Association, being informed of this discussion, writes as follows:

"Regarding the nailing of covers on shipping-cases with cement-coated nails, I want to say that there are two sides to the question. We formerly permitted our members to use the smooth nails that the G. B. Lewis Co. have been furnishing, but found that this was not practical. Members who would haul their honey from 5 to 15 miles, over ordinary wagon roads, would drive up to the warehouse with a large percentage of the top cases of their load with covers partly pried off by the friction of the cases in the wagon while on the way. Many covers would, on that account, be split up, making a bad job. Since we have adopted the use of cement-coated nails, of rather small size for nailing on the covers, we don't have any trouble that way.

"What I have said about the hauling of cases on wagons applies with equal force to

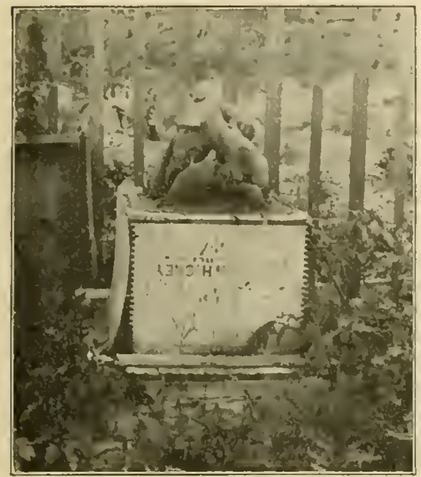

PHOTO BY GEO. J. DILG, MORTON GROVE, ILLINOIS, SHOWING UPWARD BUILDING OF COMB OVER A CROWDED HIVE.

> any that are loaded in cars and shipped out. I know when they have arrived at their destination that the covers had worked off in a similar manner, and if the dealer at the other end had the tools for opening cases, he should not have very much trouble in removing the covers nailed with cement-coated nails without splitting them. In my inspection work I have to open a great many cases during the season, and it is not very often that a cover board is split. Of course, the nails we are using for covers are not larger than 2d."

* * *

Death of Bernhard Rietsche.—In the May number we announced the death of a man who has been one of the most important factors in the advancement of bee-keeping in Germany, Bernhard Rietsche. He was the inventor of a number of things of value to bee-keepers, but the one thing above all others that has made his name a household word in German bee-keeping circles is the Rietsche foundation press. In Germany conditions connected with the manufacture and use of comb foundation differ greatly from conditions in this country. In Germany it is the common thing for a bee-keeper to make his own foundation. Here it is the uncommon thing.

To be sure, some years ago quite a number of bee-keepers made foundation for themselves and neighbors among American bee-keepers, but gradually this has disappeared. Foundation in this country is now practically all made by the few foundation makers who make it on a large scale. German thrift requires that so far as possible no cent shall be paid out for anything that can be made at home. But that is not the only reason—perhaps not the chief reason—why German bee-keepers make their own foundation. Strange as it may seem, so much of the foundation that is sold there is adulterated, that the purchaser may generally be in doubt about what he is buying.

Perhaps because less skill is thereby required, foundation in Germany is largely made in a press, the melted wax being poured into an embossed plate and an upper plate pressed down upon it. In 1883 Mr. Rietsche began experimenting with the manufacture of foundation for his own use, using a press of plaster of Paris. From that, grew by degrees the finished metal press of the present, and the immense business to which it has led. In 1896, Rietsche sent to Dr. Dzierzon as a present, a press that numbered 10,000 in the series that had been manufactured during the previous 13 years. No figures are at hand to say just how many presses have been sent out in the following 16 years up to the present time, but the likelihood is that more than another 10,000 has been reached, for we are told that the business had grown to such an extent that 1000 a year were sent into all parts of the world.

Two sons, trained to the business, have latterly conducted it, leaving the father free play to his inventive genius. His last work was upon a cylinder foundation machine to excel anything of American manufacture. C. C. M.

* * *

Driving Bees Out of Supers.—A. F. E. Hind says in the South African Bee-Keepers' Journal:

> "Raise the crate, with a screwing motion, completely off the hive, and place it on a table or box a few yards away from the hive. Then place an empty candle or soap box upside down on top of the crate of sections. If you now start rapping with the handle of your screw-driver, or any other tool, backwards and forwards on the sides of the crate, the bees will in a few minutes run out of the sections up into the empty candle box, where they will cluster. The box can then be carried back to the hive and the bees shaken out on the alighting-board. The sections will be quite free from bees, and you can take them out of the crate in comfort, without any fear of crushing a bee. This is simply "driving" the bees, but it is quite unnecessary to invert the crate as one would a skep when driving the bees. In this climate, with our warm nights, the Porter bee-escape often does not act well; the method here advocated has the advantage of requiring only one visit to the hive, and is just as humane as the escape, because not a single bee need be hurt if the operator uses ordinary care."

* * *

Bee-Biscuits and Honey.—Under this heading the Free Masons of Fruitvale, Calif., announced a lecture on bees by John C. Frohliger, for May 7th, with stereopticon views and an explanation of the methods of handling bees.

The little circular announcing this is very neatly gotten up. It promises a "Hot-Biscuit-Honey Festival," and contains some humorously worded moral maxims like the following:

> "Find out about the effect of *smoke on bees*; better have your boys learn how to *smoke bees* than *smoke cigarettes*; more profitable for them to acquire a love for *bees* than love for *booze*."

* * *

Death of Geo. H. Coulson.—On Sunday, April 28th, at Cherokee, Okla., occurred the death of Mr. Geo. H. Coulson, who, for many years, has been widely known as a progressive bee-keeper. Mr. Coulson was also well known politically, having been a representative to Congress both from Oklahoma and from his old State, Kansas. The bee-keeping public has sustained a great loss in the death of Mr. Coulson. Our heartfelt sympathy goes to the family in its bereavement.

* * *

Death of Mr. Thornton.—On April 9, 1912, at North Yakima, Wash., occurred the death of Mr. Jesse W. Thornton. For several years he had been president and director of the Washington State Bee-Keepers' Association, and was well known throughout the Northwest.

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Ontario College Experiments.—The Ontario Agricultural College reports co-operative experiments in apiculture on the following subjects:

1. Prevention of natural swarming in the production of extracted honey.
2. The same with the production of comb honey.
3. Experiments with races of bees generally.
4. The same with reference to their power to resist European foul brood.

We can not quote the entire report, but it makes good reading. A notable fact is that they have noticed the greater immunity of Italian bees from this disease.

Mr. Morley Pettit, the apiarist in charge, is a wide-awake worker.

* * *

Balling Queens, the Cause.—In Les Abeilles and Les Fruits for March, Maurice Bellot gives his idea of the cause of queens being sometimes balled in their own hive. He says this happens when the hives are too close together, and owing to some disturbance some bees make error and enter the wrong hive. "Those bees," he says, "finding a queen which is not their own, may attack and ball her." He is also of the opinion that when a queen is handled by the apiarist, she may acquire an odor which will cause the bees to dislike her.—(*Translated.*)

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Bee-Inspection in British Columbia.—Mr. E. F. Robinson, of Victoria, B. C., is bee-inspector for British Columbia, and he lately gave out his route of inspection, which covered the islands and lower mainland districts, from May 6th to May 28th, inclusive.

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Advantages and Disadvantages of Sectional Hives.—J. E. Hand, after having had sectional hives in use more than 20 years, gives what appears to be a candid summing up of their merits and de-

SWARM AND APIARY OF S. J. KNOX, BOWER MILLS, MO.

American Bee Journal

merits in the Bee-Keepers' Review. Editor Tyrrell foot-notes the article thus:

> "The conclusion that I come to after reading the above is, that Mr. Hand, after trying both kinds of hives, does not consider the advantage of either over the other of sufficient importance to warrant a change from one to the other being made. I would 'guess," however, that if he were starting anew, he would adopt the regular Langstroth hive."

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Meeting of Illinois Bee-Keepers.—A. L. Kildow State Inspector of Apiaries, and Deputy I. E. Pyles, while out in the interest of the bee-business, met by prearranged plans at Casey, Clark county. And on the afternoon of May 19th the bee-keepers of that vicinity assembled at the home of Oscar Shawver, for the purpose of gaining information concerning foul brood and its treatment.

There were bee-keepers from Greenup, Casey, Martinsville, and the surrounding country at this meeting, and a general interest was shown. Mr. Anderson, of Greenup, Cumberland county, brought a frame of European foul brood, which contained the disease in its various stages. This was thoroughly examined and explained, and many questions asked, which showed that all were interested in this matter, and anxious to gain information.

Mr. Shawver deserves special mention for the interest he took in this meeting, which was very satisfactory to all present. It was gratifying to see the fine condition in which Mr. Shawver keeps his bees.

If these meetings could be held in different parts of the State great benefits could be derived from them, and the State Inspector would be glad to meet with them and give all assistance possible.

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Honey for Baby's Hiccough.—Mother, when your baby has the hiccough, give it a drop of honey on the end of your finger. That will stop it. Try it.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

A Story—Man Put to Flight

The honey crop will be a failure in this vicinity this season, owing to the drouth. In consequence, all are feeling blue, so I will tell a bee-story to cheer them up. In the spring of 1900 one of my neighbors, who had bought quantities of honey of me, thought he would go into the bee-business himself. He bought one colony of what was called Italians, a very tame bee he was sure of that. He chose a place under the granary to set the colony, because it would be shady there. There was about 3 feet of space between the granary floor and the ground, and all went well until one hot day in July, when he telephoned to ask me whether I would come down and help him take off his honey, as he did not have a smoker. Gathering up my bee-dress, smoker and gloves, I was soon on the scene. He wore a mosquito-net over his hat, and cotton-flannel gloves. We filled an old pan with smoking rags, had the smoker going, and started for the colony.

We pried off the super. The bees were mad, and soon were stinging Mr. A. pretty bad. I handed him the smoker and pan of burning rags, and told him to go to the house. He did as I said, but as Mrs. A. had fastened the screen-doors, he could not get in the house, so he commenced to run around the house with about 7,000,000,000 bees after him. He soon threw the smoker away, then the pan of burning rags, but kept running around the house. I finally called to him to go into the cellar, which he did, and stayed there, a very badly stung man.

I could not lift the super of honey, so I carefully turned it, wheel fashion, from one side to another until I got it some distance away, and then pried out the sections of honey. I am afraid you can not see any laugh in this, but I have laughed many times when I recollect how Mr. A. speeded around the house, jumping about a foot in the air at each step. Was it wicked to laugh?

Ohio Bee-Woman.

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One Woman's Method of Bee-Keeping

Here is a clipping from the Woman's Home Companion giving a pleasing picture of the activities of one of the sisters whose name and address one can but wish had been given:

> In the very heart of a city in the Middle West, there is a young woman whose hobby is bees. Among the sheltering lilacs and syringas of a simple, old-fashioned garden there is a neat little row of modern white bee-hives, while under a fine, old flowering catalpa, in the middle of a small clearing, stands a modern observation hive wherein the bees are compelled to build their combs between glass partitions, one over the other, so that the entire interior of the structure may be available for study. Here the young bee-keeper spends her leisure hours during the summer months, earnestly trying to master the rules of perfect communism so rigidly followed in the miniature world she possesses but can not rule. Twice a week she gives afternoon "bee-talks" to the children of her acquaintance; and so persuadingly does she speak, so full of insidious enchantment are her words, that one leaves her presence with a growing conviction that life without bees is but an arid waste.

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Caucasians and Italians

Dear Miss Wilson:—From your criticism of my paper, published in the March number of the American Bee Journal, I see that I failed to make my meaning clear. In regard to the expression that the Italians were not good for extra-early brood-rearing, I had in mind bees that would respond to the same stimulative feeding after the first flight in March or April (or even before) that Mr. Alexander recommends for Italians after fruit-bloom. You would hardly recommend just that for the Italians, would you?

I am aware that with my very limited experience with the Caucasians I ought to speak modestly, for it is quite possible that the chameleon which appears to me to be "honest Indian" white, may really be green to some one else. But is it true that the Caucasians have been found anywhere near equal to the Italians for the production of comb honey? I have never noticed if it has been so reported. If this should prove true, it would be to me like one of our old friend A. I. Root's "happy surprises," and I would discard the Italians.

The Caucasians build up such beautiful white comb, or mine did, and were so much more hardy, prolific, and gentle, and in every way satisfactory. But, "in this locality," they were like the Carniolans, in that they would not bear crowding for comb-honey production.

If any one would suggest to me any system of management (that did not require too great labor and expense) by which the Caucasians could be induced to enter and work in the supers as the Italians do, instead of

determinedly swarming, I would feel myself greatly their debtor. I shall be unable to procure Caucasian queens until too late for the proposed experiments this spring.

D. E. Light.

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Getting a Swarm Under Difficulties

The colony here represented came out as a swarm about May 7th of last season. They were about 15 feet from the ground, but by tying a rope around the hive, and placing the end over a limb (after climbing a ladder), I finally got the hive in place, and came out the victor. I secured a fine colony of bees, which gave me two supers of honey.

Fifteen Feet Above the Ground

Williams, Nebr. (Mrs.) L. C. Lamb.

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Using a Queen-Excluder to Prevent Swarming

Dear Miss Wilson:—I greatly appreciate your thought and interest in my troubles. I have learned more from your reply than all of my readings in books, and am most pleased.

I do not want more bees than the 3 colonies I have. Now, if they will swarm, why can't I hive them in a box and put on top of it one of those bee-escapes that permits the bees to go out and not the queen, then will not the bees go back to their old home? I can have a glass front in the box so that I can see what is going on. I have put up some extracting frames, and shall put them on. I wish I could get all my queens and clip their wings, but that is beyond me. I am dull at finding them.

Ellen B. Spofford.

It is not entirely clear just what your plan is with the box, but it seems that in some way you are depending upon a queen-excluder to hold the queen and allow free exit for the bees, with the expectation that the bees will be obliging enough to go back to their old home. You may as well make up your mind that nothing of that kind will work. If the bees are hived in a box with an excluder over it, they will accept that box as their home just as if no excluder were present, the presence of the queen being to them the thing that matters. Some have thought to prevent swarming by placing a queen-trap or excluder at the entrance, reasoning that the queen would thus be prevented from going with the swarm, and that the bees would return to the old hive upon finding no queen with them. All that is true enough. But that is not the end of it.

Very likely the bees would swarm again the next day, possibly more than once, and possibly on succeeding days. Then in about 8 days—more or less—the first virgin would hatch, and then the fun would begin in earnest. The old queen would likely be killed, the bees would swarm and swarm, likely until all the virgins had left their cells and fought until only one was left alive, and then if the trap was still left at the entrance the remaining virgin could not leave the hive to be fertilized, and would be a drone-layer if a layer at all.

You evidently have a feeling that you can not succeed at finding queens. Please don't feel that way. "If at first you don't succeed"—you know the rest. Just keep a lookin'. But don't look too long at a time. After you have looked over all the frames perhaps the second time unsuccessfully, just close the hive until an hour later or until another day. And when you do find a queen, it's such fun. But after you have had much experience at it, you may still find times when a queen in some mysterious way escapes your eye, and you may as well give up the search. The writer has found thousands of queens, sometimes 50 or more on the same day, but many a time has had to acknowledge defeat and close the hive until another time.

You say you are going to put on extracting-combs. Thanks for that information. For that lets out the fact that you are working for extracted honey, and in that case you may use the Demaree plan to prevent swarming. Many report the plan a perfect success, while some report exceptions. Let us hope that you will have no exceptions. Here is the plan: A little before time for swarming, put all the frames of the colony in the upper story, leaving empty combs or frames filled with foundation, and also the queen in the lower story; a queen-excluder between the two stories. Never mind where the bees are, they'll take care to divide themselves properly between the two stories. It may be well to leave one of the brood-frames below, and to kill all queen-cells in the upper story a week or 10 days later.

Marking the Hive Tool

After hunting two hours one hot day in July for my hive tool, which I had lost in the deep grass near the apiary, when found I thought to myself, life is too short to hunt for lost tools, so I tied a piece of bright red flannel to my hive tool, and if I lose it again I can easily find it. "A word to the wise is sufficient." IMA.

Another good way is to paint the hive tool red.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Honey—The Consumer's Dollar, and Who Gets It?

The "consumer's dollar" and the parties who get the big end of it is an interesting subject to me.

The Department of Agriculture gives the average production of a colony of bees at 25 pounds yearly. As most of the honey produced is comb honey, and that is the kind I am familiar with, I will endeavor to show what share, as nearly as I can, each one in the movement from the producer to the consumer gets for his trouble.

One hundred colonies of bees, with equipment to manage them, will represent an investment of about $600, and out of the proceeds from the honey sold will have to come the interest on the investment, taxes, depreciation, repainting, etc.

For harvesting a crop of 25 pounds, we will require the following supplies:

3000 section-honey boxes at $5	$15.00
100 shipping-cases at 20c	20.00
20 pounds comb foundation at 60c	12.00
10 new hives for swarms, with supers	25.00
New tools—smokers, veils, etc.	2.50
Freight, drayage and incidentals	8.50
Total	$83.00

This makes a total expense of $83 for supplies to produce and prepare for market 100 cases of honey. Most of the comb honey here in the West is bought up by jobbers or dealers from the Middle Western cities—St. Louis, Cincinnati, Cleveland, Indianapolis, Chicago, etc.

This year the price ran from $2.25 for second grade to $2.50 for No. 1—both ways; less being paid in some instances and more in a few others for the very choice graded stock. The buyer pays cash for the honey f. o. b., and from 2 or 3, to a dozen or 20 producers put in their honey to fill the car.

Here are the figures:

60 cases of No. 1 at $2.50	$150.00
40 cases No. 2 at $2.25	90.00
Total	$240.00

This gives a total of $240 for the crop, and subtracting the expenses, $83, leaves $157 for the producer, to pay him for his labor, interest on the investment, keep up repairs, pay taxes, etc.

Now let us follow this honey to market and see who gets the big slices. The buyer of the honey from the producer is primarily a speculator, and is going to sell for all he can get, so he fixes the price at a figure where he can make about a dollar a case, sometimes more and sometimes less. He will distribute the car around among the wholesalers, giving them 10 percent commission—sometimes a little larger commission. I find that comb honey retails for 18 to 25 cents in the markets where our Western honey is sold, and this is about the way it goes to the consumer:

20 cases No. 1 (24 lbs. to the case) at 25c, $6	$120.00
40 cases No. 1 at 22½c, or $5.40 a case	216.00
30 cases No. 2, retailing at 20c, or $4.80 a case	144.00
10 cases No. 2, retailing at 18c, or $4.32 a case	43.20
Total	$523.20

This makes a total of $523.20 that the consumers pay for this honey.

The producer gets $157 of the $523.20, or 30 cents of the dollar; railroads get $35, or 6⅔; bee-supply manufacturers get $70, or 13⅓; the jobber gets $100, or 19; wholesaler gets $40, or 7⅔; retailer gets $121.20, or 23⅓; consumers pay $523.20, or $1.00.

The jobber, wholesaler, and retailer are getting 50 cents of every dollar for the distribution, while the work done by the producer, the railroads and the bee-supply manufacturer and his dealer get the other 50 cents. Much is still to be done in reducing railroad rates, and perhaps the bee-supply manufacturers are charging all the traffic will bear, but the big thing to be accomplished is to cut down the 50 cents the middlemen get to about 10 cents. Under our present system of distribution this is not possible, but it is under co-operation, which will bring the producer and consumer together.

Now, as to the damage that this big profit in the hands of the jobber, wholesaler and retailer does: It gives the jobber the means to "doctor" the market reports by reporting an immense crop in California, or the East, as his fancy or interest dictates. He sends out crop reports for our enlightenment, telling us that there is a large crop, and that the earlier we sell the better. The wholesaler and retailer cry "hard times," honey will not sell, and there is no demand for luxuries. The price goes down until the market is supplied by us poor fellows who need the money for our honey, and we sell at such a figure that the middlemen can make a fine thing with fancy comb honey for the early winter and Christmas trade. Yes, it is very evident that the 50 cents the middleman takes from us is used as a fund to keep the 50-cent pieces coming his way, and if possible increase the 50 cents to 60 or 65. Parcel post and co-operation will start things the other way all right.

Bee-Culture Still in the Woods

Admitting that progress has been rapid in the development of bee-keeping practice, the observer of conditions, the wide country over, realizes full well that development has been along but a narrow margin of the field. There may be 40,000 keepers of bees who are more or less awake to the advancing methods, but we have 700,000 bee-keepers in the United States. For the last 10 years we have been losing 10,000 bee-keepers each year. At this rate, bee-culture would be an extinct industry, the bees but a memory, and honey one sweet dream in 70 years.

One progressive bee-man in 17 is hardly enough of a saving grain of salt for the pursuit. He is overwhelmed by the "fear thought," so that it is pretty much of a proposition to maintain courage. Remembering that there are whole counties where the commercial importance of the industry has been wiped out by foul brood and ignorant management, should cause a thinking man to ponder.

Today I saw a super on a hive of bees, with 11 sections, no starters at all, and the propolis had been collecting for years on the mildewed wood. The sections were set in every way, and as far as utility, a bundle of sticks would answer as well. The owner was blissfully ignorant of my opinion of his bee-keeping, and would have been complimented had I taken a picture of his little apiary and manner of supering.

Hardly a person believes it a possibility to get foul brood under control in districts where the disease is prevalent. Now, what shall we do about it? We can get bee-keeping incorporated into Farmers' Short Courses. Work in bee-culture should be obtainable in every agricultural college and agricultural high school in the country. There are several very good reasons for this.

When a young man goes to an agricultural college he has a $10,000 barn to work with as his model. Expensive hog-yards, poultry houses and cattle-feeding yards are provided. This young man, upon leaving this institution, can not hope to have such an equipment on his own farm for years. What does he do? He gets a job as a teacher in some agricultural college, or with the Department of Agriculture, or perhaps a salaried position as manager of some wealthy man's estate. He is not able to begin for himself as he wishes.

The culture of the bee is different. With a few hundred dollars, a graduate of a school of agriculture, who has specialized in bee-keeping, can begin and follow the best practices, make a living and get ahead from year to year.

Such a graduate would very soon distance the ordinary specialist bee-keeper as we know him. He would be trained in queen-breeding, in the preparation of a colony of bees for successful wintering, in the methods of securing a large force of bees for the honey-flow. He would have learned the importance of system and accounting, so that he would know whether it required 5 or 15 pounds of the honey crop to pay interest, depreciation, expenses and salary for himself. He could and would be able to say what had been his profits.

Now, do not think that these things can not be learned outside of a school of agriculture, for they can. A few are learning these things. But the majority will learn much faster if they can be given the training without the distracting elements of commercial bee-culture.

It is possible to secure a thing of this kind easier than many imagine. Determination and persistence will secure the recognition of our rights. If agriculture had received one-half of what has been expended on the Army and Navy, this country would now be invincible, and the envy of the world. But with the scanty recognition accorded our little corner of the agricultural field, we are making some headway, and if we work hopefully we will grow by what we feed on.

Let us tell our agricultural college men of our needs every opportunity we get, and constant application will have its effect.

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The Railroads and the Bee-Keeper

It costs $3.00 more to ship a car of comb honey from Nampa, Idaho, to Portland, Oreg., than it does from Nampa, Idaho, to Denver. The Pacific Coast is the logical market for Idaho honey, and with favorable freight-rates the Idaho bee-keepers could get as good prices as the men located farther East. It is hoped that every bee-keeper interested will do what he can. It is important to the Eastern market that this honey should go in the direction of the demand, and not be held up by the excessive rates.

This petition of the Southern Idaho bee-keepers will explain itself:

BEE-KEEPERS PETITION FOR BETTER RATES.

The bee-keepers of the South Idaho and East Oregon Association have sent in the following petition to the O. S. L. Railway. L. C. McCarty, of Nampa, has the matter in hand. The petition reads:

"We, the undersigned bee-keepers of Southern Idaho, beg to submit herewith a few figures on honey-rates from Southern Idaho for your consideration. We take Nampa as a basis;

"Honey carload Nampa to Denver, 95c cwt.; less carloads, $1.17 cwt. on extracted honey. Carloads, $1.27 cwt.; less carloads, $2.00 cwt. on comb honey.

"Portland carloads 75c cwt.; less carloads, $1.14 cwt. on extracted.

"Portland carloads 96c cwt.; less carloads, $1.48 cwt. on comb.

"The past year was a very poor honey year, and about half a crop was harvested, although there were about 10 cars shipped out of Southern Idaho. Normal years, we would be able to have twice to three times this amount, as the bee-industry is becoming more active each year.

"We had flattering offers on honey this year from Portland, but the rates were prohibitive, and we were compelled to sell our honey East, and locally, as we could no compete with water rates from California points to Portland.

"Considering the difference in the distance between Denver and Portland from Nampa, we believe the rates to Portland are hardly in line with rates East, and respectfully ask that you take this matter up with proper officials with a view of obtaining some consideration in rates to Portland."

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The Soil and Apiculture

Wherever weeds grow the rankest, there you may rest assured the honey crop will be the most bounteous. Sweet clover and alfalfa yield more nectar where sage brush covered the land prior to cultivation, than where buffalo grass and cactus held the field. The deeper the soil, the better the honey crop, also holds good. In studying the West, it is well to remember these little points. They spell partial success or failure. A soil made up of volcanic ash formation has the right combination to raise hundred bushel oats and hundred pound comb honey averages, too. I don't know why this is, but the sweetness seems to be in the soil waiting for the flower to lift it out and pass it to the bee.

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Co-operative Honey Selling

The Pecos Valley Bee-Keepers' Association sells honey co-operatively, and is protecting its members' interests in every way. The Association issues a little farmers' bulletin on spraying, citing many authorities to show the damage to the fruit as well as to the bee-keeper from spraying when the trees are in bloom. It is about the neatest written little circular it has been my privilege to see.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bee-Inspectors' Demonstrations

The matter of bee-inspection in Ontario was noted with considerable interest, mainly because the demonstration work in connection with bee-inspection is a subject that the writer has not only been interested in for a long time, but one that we have carried out in several instances.

In our inspection work, in a certain locality, it was so arranged that a all the bee-keepers in that neighborhood, if possible, were gathered together, either at one of the apiaries where foul brood existed, or at a school-house, generally centrally located. One of the meetings, especially, that was held in a school-house was one of the most interesting foul-brood meetings at which the writer has ever been present. The advantage of holding such meetings in the school-building is that not only combs containing the disease and other foul-brood material, as well as microscopes, etc., can be used to a better advantage, but the black board aids materially in illustrating various features connected with the disease, and the method of handling and treatment. The latter is especially valuable if the inspector is a good artist, as it is possible to convey different points under consideration much more satisfactorily, and they are much more easily grasped by those in attendance, and consequently remembered better.

It is true that other features may be best shown in the apiary where foul brood is being treated, but the time required will be longer. More ground can be covered with the use of sufficient material and black-board illustrations in the school-house meetings. Our experience is, that the attention of the audience can be held closer to the subject than if a large number of bee-keepers are devoting a part of their attention to other matters while gathered in the apiary.

We are glad that Ontario's Provincial Apiarist, Morley Pettit, has adopted this method of giving demonstrations in connection with the foul brood inspection work. The writer gave such demonstrations while inspecting during the years 1902, 1903 and 1909. The plan, therefore, is not a new one on this side of the line, and whether the caution had been taken by Mr. Pettit to copyright the plan or not, it would not have interfered with the plan already put in operation by the writer nearly 10 years ago. It is hoped that this plan of educating bee-keepers about foul brood and other diseases of bees, and the manner of treating them, will be more largely adopted and carried out, as it is one of the most practical means by which great good can be accomplished.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

North Carolina a Promising Bee-Country

A short time ago I mentioned the fact that my father was spending the winter months in North Carolina. A few days ago he returned home, and brought with him, among other things, two samples of honey from a friend in Buncombe county—a Mr. Horton, if I remember the name correctly. The samples were from the poplar and sourwood. The first named was not fancied very much by the members of the family in general, although, for myself, I could eat it all right. Dark in color, and rather strong in flavor, yet it is not as prominent in either of these characteristics as buckwheat honey, and for any one who likes the buckwheat article, no doubt the poplar would find equal favor. As to the sourwood honey, it is a nice article, but we may be pardoned for thinking it *not quite as good* as our clover and basswood.

By the way, my father thinks there is a great future for the honey industry in the county named, and he was surprised, with all the favorable things present to encourage bee-keeping, that the industry is not more developed than is the case. He painted such a glowing picture of the section that the writer felt that it would be a good place to go to; but when my better half heard him say that there were quite a lot of snakes in that country—well, that settled all my chances of migrating, unless I should decide to go without her, and, of course, such a thing is out of the question, for if left to my own devices I would surely be getting into all sorts of trouble.

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Prospects Through Canada

In the May issue of the American Bee Journal I stated that the little clover we had left last fall had wintered well. I had not reckoned with the latter part of April yet to come after the time I was writing, and at this date there is a different story to tell. With hard freezing by night and thawing by day, our alsike was badly injured—much of it killed outright. This is speaking of only York county, as I have not had reports from other sections. A trip a few weeks ago up through the northern part of Simcoe showed the clover to be all right there, so no doubt in many places the prospects are good for a crop. As to wintering, reports are meager and conflicting, but losses are not heavy in general, and where bees wintered well they are very strong at date of writing (May 13th), considering the late, backward spring we have had.

The first 10 days of May were ideal bee-weather, but today the change has been to very cold weather for this time of the year, and with the rapid extension of the brood-nests during the past two weeks, no doubt brood will be chilled, especially in unprotected hives. Yellow willows and hard maple are in bloom, while dandelions are just opening. Naturally bee-keepers will be looking for a return to warm weather with interest, when such an abundance of spring bloom is awaiting the bees, and they will be very glad if the present cold snap does not develop a frost before the warm change comes again.

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Cement for Hive-Stands

G. A. Deadman tells in the Canadian Bee Journal how he made a number of cement stands for his bee-hives. Aside from the growing scarcity and consequent high price of lumber, Mr. Deadman says that the cement stands are better than those of lumber, because of less dampness to affect the bottom-boards, and, again, hives will not freeze down to the cement—this latter advantage applying of course only to cellar wintering. Wooden forms are made to hold the cement, and as to the cost and labor, I quote from his article: "Thirty bags of Canadian cement combined with nearly 2 loads of sand (3 cubic yards) made 300 blocks. Two men can easily make 15 blocks per hour, exclusive of emptying and refilling the molds, which is hard to estimate, but which does not take long. The cement at 40 cents per bag, and the sand at $1.50 per load, would be 5 cents per block for the material, or 5 cents per hive. To this must be added the price of the labor."

The durability of these cement blocks will appeal to all who have bees are never moved about, and I have often wished for something that was always in its place, that would not topple over or get "lop-sided," that would not rot—but why enumerate further, when all who have had experience with bees know of the trouble in keeping good foundation for the hives? However, if one is moving bees very much, the cement stands are not to be considered, as their great weight makes them undesirable.

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Another Inspector in Canada Dies

When writing the obituary notices of three departed friends last month, little did I think that at that time another inspector of apiaries had just died. Col. J. B. Checkley, inspector for three of the eastern counties, while in the best of health apparently, suddenly was stricken and in a short time passed away. I had never met Mr. Checkley, but my apiary in the east was situated only 5 miles from his home, and while out there I heard of him quite often. Universally respected by all who knew him, his death will be a great loss to the whole community; to the family in particular his unexpected demise will be a source of great sadness indeed. As to who will be called to fill the offices of the two deceased inspectors I have not yet learned, but one thing is getting to be more in evidence all the time, in the future it will be more and more difficult each year to get qualified men to take up this work, as men so qualified choose rather to be in apiary work themselves than to go on inspection work, which is not at all a bed of roses.

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Value of Conventions and Demonstrations

May is the month in Ontario when conventions and demonstrations in apiaries are in order, and at present a number of them are being announced. These meetings are of very great educational value to all attending, and aside from that, to me at least, it seems that the social side of these meetings is just as important as the educational. Often some will be disappointed because "direct results" of these meetings are not more in evidence, forgetting that great benefits are received by individuals that are not apparent to any one but the one receiving them.

By all means encourage these meetings, even if you are not of the "beginner" class, and have an idea that you can learn nothing by attending. Chances are that you will be mistaken in your views, and even if such is not the case, you may be the means of helping some one else. Who will not admit after all is said and done that more satisfaction comes from giving than from always expecting things to come your way?

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Tribute to Mr. York

With mingled feelings the writer learned of the change in the management of the American Bee Journal. First I noticed who the purchaser of the Journal was, and it gave me a source of pleasure to know that it had fallen into such able hands. Then as I reflected over the relations of the retiring editor with myself for a number of years past, I could not help feel sorry that in a certain sense our relations would not be quite so close in the future as in the past. During my years at bee-keeping, and especially since the time when I started to scribble more for less for the bee-papers, Mr. York has been a friend to me at any and all occasions, and sentiments hard to put on paper come into my mind as I write.

In so far as I am aware there is no "Irish" blood in my veins, so I will not be accused of having "kissed the Blarney stone" in expressing myself as I am, and while the many, many friends I have learned to know all over the continent are valued by me as my best "assets" gained during the past few years, very few indeed of these dear friends stand *quite* as close to me as George W. York. A gentleman in the best and truest sense of the word, wherever he goes, and whatever business he engages in, the good wishes of a host of friends will ever be with him.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Removing Honey—Selling-Price of Honey

The spring honey-flow is now over, and section and chunk honey supers should be taken off the hives, the honey removed, the supers cleaned and set away in readiness for the summer and fall flows—partly-built combs should be given back to the bees.

Extracted honey can be drawn off in tins after it has remained several hours in honey-tanks, barrels, or whatever has been used for storing it. Or the fancy grades may be drawn off in regular honey-jars, or pint and quart Mason fruit-jars, which are good vessels for the purpose, and can be obtained anywhere. All vessels should be neatly labeled, bearing the name and guarantee of the producer.

The darker grades of chunk honey should be packed in large mouth friction-top or screw-top cans and pails, in size similar to those for extracted honey. The light or fancy grades should be packed in jars by cutting the comb in small strips as long as the height of the jars, and placing them in endwise. All vessels thus packed should be filled with extracted honey, then labeled and packed in the same manner as extracted honey for market.

Comb honey in one-pound sections should be graded fancy, No. 1 and No. 2. The fancy grade should be amber or light in color, and sections well filled; No. 1 grade should include all well-filled sections of dark honey, and sections of light honey that could not be graded as fancy. These sections should be over three-fourths filled. No. 2 should include all sections not less than two-thirds full. No sections containing broken comb or honey that would be liable to leak out, should be included. Comb honey in 1-pound sections should be packed in regular shipping-cases, and the cases crated to suit the trade.

After the honey has been properly graded and packed, the question of a market for it is not a very serious problem. Let the people over the country know that you have nice honey for sale, and get them to taste it. Soon they will take all you have to offer, and in this way you will work up a market for your honey right at home, or the towns near you, that will surprise you. For the city trade you can best handle it through your grocers, allowing them a percentage for selling, or you can sell to them outright as soon as they find they have demand for it.

Dark honey packed in pails and cans should net the producer not less than 8½ cents per pound. The fancy grades packed in glass jars should net not less than 10 cents per pound. Dark chunk honey packed in tin cans and pails should net 9½ cents per pound, and the light grades of chunk honey packed in glass jars should net not less than 11 cents. Fancy comb honey in 1-pound sections 12 cents, No. 1, 10 cents, No. 2, 8 cents per pound.

[A comparison of prices and grading rules as suggested here by friend Wilder, and those given out by others in distant parts, such as the Colorado Honey-Producers' Association, will indicate how difficult it will be to obtain uniform rules and equal prices throughout as large a country as this.—EDITOR.]

Honey Crop Reports

Very encouraging reports have come in from most sections of Dixie. This, indeed, is very gratifying, for the bee-keepers were somewhat discouraged over the prospects several times during the spring, owing to unfavorable weather conditions. More than an average crop was harvested, except along the large streams where the great flood with heavy rainfall almost put an end to bee-keeping.

Such was the case in the tupelo-gum region. Spring ty-ty and gallberry gave unusual heavy flows, as did the poplar in the most northern region. Perhaps there has never been as much swarming among bees in Dixie as this season, and great increase has resulted.

Automobiles and Auto Trucks for Bee Keepers

Gleanings in Bee Culture for April 1st, was the automobile edition, and a "good number." I was surprised to know what some of my Northern fellow bee-keepers were doing with these cars. I wish we could use them down here to help us solve our labor and other problems, but the poor condition of the roads is prohibitive, especially during the rainy season, for we have to cross streams, which would be the most difficult problem to solve. I have to cross many unbridged creeks in making my rounds. Then I fear that our roads would soon impair a car, and in the long run it might not render good and lasting service.

One of our helpers has a good passenger car, and we have made the rounds to our apiaries when we could. It proved a great help to us. The distance from one yard to another was soon passed, and we had to keep our veils on all day. Then it would rain and the water would rise in the branches and creeks, so we would have to resort to our horse and buggy. We have decided not to invest in a car until we have better roads, and that when quick trips are necessary it would be far more economical to hire a car. I think this is the experience of many others, but we will purchase one as soon as our roads will justify.

Pleased With the Caucasian Queens

I bought Caucasian queens last September and succeeded in getting 5 of them introduced. I watched with eagerness to see the first bees emerge from their cells, but it was late in the season, and I did not see much of them until this spring. Although it has been the most unfavorable spring for bees to build up I ever saw, they have built up at the most wonderful rate. The hives are boiling over with bees, and the combs are full of brood. I have just put the supers on. They had made no preparations for swarming. They are so gentle I can handle them without smoke; in fact, I have to push them out of the way to handle the frames. I am well pleased with them so far.

Newbern, Ala. F. A. JAMES.

Plenty of bees and plenty of brood at the proper time means everything to the bee-keeper. We have a large number of colonies of this variety of bees and their crosses that have 3 full-depth 8-frame bodies of brood, with some pollen scattered through the comb, but only a small amount of honey in the brood-nest, and each colony has enough bees to make good headway in from 5 to 7 shallow extracting-supers. We will have to bring up poles from the woods around the apiaries and prop these "sky-scraper" hives to keep them from toppling over in the strong winds.

Has Dixie a Mild Climate?

DEAR MR. WILDER:—We people up here think of Dixie as a country of a sunny, mild climate, and we notice that you gravitate southward during the winter. How would you like to spend a winter up here such as this one with steady cold below zero for several months? The ground is frozen several feet in depth. Dynamite has to be resorted to in order to dig graves, etc. Snow and ice are so deep that telephone wires can be touched from the drifts along the lines.

What I set out to tell you is, that the Caucasian bee is a poor one to cellar, as they close the entrances of the hives so much that they can not get the necessary air during confinement. But out in the open air they winter well.

I have 8 colonies in single-walled hives with no protection beyond what they had the summer before, and I took a peep at them yesterday, expecting to find them all frozen or dead, but, to my surprise, I never saw bees wintering so well.

JAMES W. COWAN, M. D.
Geneseo, N. Y.

As a whole, we do have a mild climate in Dixie. In the mountainous section the weather may be a little frigid for a few days during mid-winter, but usually the cold lasts but a few days at a time. We gravitate South at the approach of winter, not so much for the climate as for recuperation; a period of rest, and to "catch up" with our fishing, hunting, and to have a "good time" in general out in the open air. It does us good in many different ways. Our bee-business ties us fast to the stake of constant toil for 8 months a year, and from 14 to 20 hours a day. Bee-keeping properly carried on here is a proposition of toil, and we must resort to periods of rest. The best way to take this rest is to leave the business with an honest and industrious man and get away. I couldn't and wouldn't spend a winter up where you are. It makes my frail body and thin limbs quiver to think about what you have to stand these hard, cold winters.

Dixie bee-keepers are blessed with a good climate and great opportunities for their line of business.

Northern Bee-Keepers' Appeal for Bees

In Gleanings in Bee Culture for May 1st, we read an appeal to Southern bee-keepers, for the benefit of the Northern apiarists, who have lost heavily during the winter. It reads:

> "There are many bee-keepers in the Southern States who doubtless will be able to do their brethren of the North the good turn of putting them on the track of bees in box-hives."

The editor offers to publish a free list of those who may lend a helping hand. Surely, when any one takes such a stand for our industry, its greatest good must lie very near his heart.

CONTRIBUTED ARTICLES~

Stations for the Observation of Bees

BY J. U. KRAKENBUHL.

The article on "Co-operative Apiarian Experiments in Canada," in the February issue of the American Bee Journal, was to me of great interest. Mr. Morley Pettit is on the right road to fasten facts on bee-keeping, to correct errors, to solve questions about locality, etc. The correspondence reminds me of the "Stations for Observation of Bees," as they have had them in Switzerland for more than 25 years.

I have before me the report by Mr. Juestrich, at St. Gall, about the work of the stations their first 25 years.

The aim of the stations is to investigate the condition of the nectar-flow, weather, life and activity of bees; to examine technical questions and methods, etc.

When the motion was put before the bee-keepers to erect these stations, some greeted it with enthusiasm, and others had a doubtful smile.

In 1885 there were 4 stations started; now there are 38; of this number, 8 are double stations. They are scattered through the German-speaking part of the country. They all range from 295 meters (Basel 980 feet), to 1468 meters (Davos 4890 feet) above sea level.

Each station is equipped with thermometer and scale, and makes daily notes and reports monthly to the chief (Mr. Juestrich). He compares, sifts, corrects errors, gives hints, etc., and works out monthly and yearly reports for publication in the Bee Journal. The yearly report fills the February number of the paper, and is in form and contents a masterpiece of lasting value.

The climatic and floral conditions of this small country are very variable, and the reports of the stations vary also. Statistic and graphic tableaux show the differences, and are of great value to the thinking reader, especially for the bee-keeper around a station with the same climatic and floral conditions

The observer further reports about the nectar-flow, source of pollen, the winter consumption, and shows the farmer and fruit-grower the great value of bees as pollenizers. He works for up-to-date rational bee-keeping, shows the best way of brood stimulation, wintering, harvesting, reports diseases, etc.

With the years they found out that the best bee for north of the Alps is the brown or native bee. By pure breeding and careful selection the Swiss suppress and eliminate the imported Italian and Carniolan blood.

Foul brood insurance and inspection with the help of the Government, and breeding of the black race (Rassenzucht), are on the way to great success.

Bee-keepers' associations of the neighboring countries, Baden, Wurtemberg, Bavaria, Monrovia, Bohemia, Thuringia, Tyrol and others begin to follow the Swiss.

The observers work without compensation, for bee-keepers, as a rule, are an unselfish lot, ready to sacrifice a little time for the common good. They find satisfaction and reward in their interesting work.

Spring Sta., Ky.

[Switzerland is setting a good example to the rest of the world in many things. There is something for us to learn from the above information.—EDITOR.]

Large Numbers of Queen-Cells By a Simple Method

BY F. GREINER.

There have been various methods in vogue to have queen-cells built in either queenless or queen-right colonies. Brood-combs containing young larvæ, or eggs only, have been cut into narrow strips, and these have been fastened to bars flatwise. The bees have always been ready to accept them and build queen-cells from the larvæ contained therein; artificial cells have been made, then provided with royal food, and larvæ have been transferred into them. The first-named method was awkward and wasteful; the second required good eyes and a steady hand. Both of these some of us do not possess any longer.

No wonder Mr. H. L. Case's method, of which I wrote in another periodical a year or more ago, and which was again explained at a bee-keepers' meeting held in Syracuse, N. Y., Jan. 30 and 31, 1912, attracted the attention of many.

Mr. Oscar Dines improved on the plan somewhat, inasmuch as he has made it applicable to the sectional hive, having the cells reared in the midst of the brood-chambers, or rather, between two of the sectional hive-bodies, by inserting a narrow rim the size of hive, be it a Heddon, Hand, or any other, and placing the combs, or the comb, containing the young larvæ to be transformed into queens, into this in a horizontal position, *i. e.*, flatwise. In order to make this plainer, I will add a photograph of the arrangement.

The most important part, however, is the treatment and preparation of the comb to be used in this method. There will be no transferring of larvæ, or looking for those just hatched, etc., all of which requires good eyesight and steady hands. The comb which we select to have our breeding-queen fill with eggs should be a nice clean comb, not too old. This, to begin with, is placed in the center of the brood-nest of the breeding stock and left 4 or 5 days. At the end of this period the comb will be found full of eggs, etc., if the conditions are right. The bees are brushed off, and it is prepared as follows: Beginning at the upper end of the comb, having it lying flatwise upon a table, destroy 2 rows of cells with a knife, mashing down the cells and cutting to the midrib; leaving one row, and again destroying 2, thus following down to the bottom, or as far as there is brood, destroying 2 and leaving one alternately. Now, with a small chisel remove those destroyed or mutilated rows of cells all over the comb in such a way that you will leave every third row of cells containing eggs or larvæ uninjured.

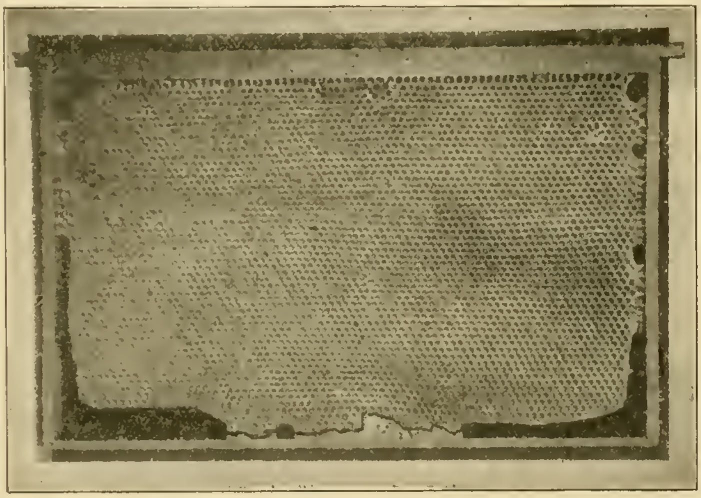
Now, we must not leave all this brood and give it to our cell-building colony, or we would have many queen-cells built and joined together. We want these cells separate, so that we may be able to cut them out conveniently. Therefore, we take a small tool, or a match, and knock out 2 cells in the row and leave one uninjured, continuing thus until we have treated each row of cells which had been left intact after the previous operation, in such a way that only every third cell is left untouched.

The cells from which queen-cells may be made by the bees are now evenly distributed over the comb, and this latter is ready to be given to the cell-building colony, which, of course, must be queenless with no brood, or only sealed brood, in the hive. It is a disputed question which is best, sealed brood or none at all. There should be an abundance of young bees in the hive, for only such produce chyle or larval food.

Mr. Dines dequeens about 6 or 7 days before he gives the prepared comb, or combs, and at the expiration of this period destroys all queen-cells which the bees have started. He thinks the colony is then in an ideal condition to go to work on the prepared combs. Mr. Case dequeens only one or two days previous to giving the comb of eggs and larvæ, then he takes away all brood, giving combs with some honey and pollen instead.

The prepared comb, with the young larvæ, is placed flatwise on the top-bars of the frames, with space enough under the comb to give room for the queen-cells.

With the hanging frame having projecting top-bars, a specially constructed arrangement to hold the prepared comb, and hold it in just the right place, is very desirable. Mr. Dines showed such an arrangement at the Syracuse convention, mentioned before, and the same received the endorsement of many distinguished bee-keepers present. It consisted of a narrow rim, the same size as the hive he uses. We might call it a very low brood-chamber, 2½ inches high.



The illustration represents Oscar Dines' device for holding a brood-frame horizontally and supporting it in its proper place for the purpose of rearing queen-cells. It does not show the height of the rim.

The illustration will show how the prepared comb is supported therein by having a little notch cut in it to receive the projections of the top-bar; the other end of the comb rests upon two nails driven in the proper places. Without having tried such an arrangement myself, I believe it will be a good thing to use, and may be made for any style of hive and any size of frame. Mr. Dines uses a very shallow frame, requiring two to cover the top surface of his hive.

After giving the prepared comb to the cell-building colony, in a hive with standard frames, the comb is covered with cloth and cotton batting, or other similar material. I am not sure that it will make very much difference whether or not the bees have access to the upper surface of the prepared comb. If they do, the brood therein develops, and when the queen-cells are ready to be cut out on the 10th day, the worker-brood is sealed and will be destroyed in the operation of cutting out the queen-cells; whereas, if they do not have access, the brood does not develop, and the cutting out of the queen-cells is simpler. Apparently, Mr. Dines has allowed the bees to take care of the brood on the upper side of his prepared combs, as he places them between two sectional hives with sealed brood in the one above and the other below, as well. Therefore, it would be difficult for him to shut the bees away from the upper side of the prepared comb.

I hope that I have made this matter plain. Mr. H. L. Case told us that he had over 100 fine queen-cells built out on one comb, and after the queens had hatched from these cells, the amount of unconsumed royal food left in them would indicate that the queens did not lack food at any time during the time of their development.

The honey-producer who desires to rear his own queens, particularly when he wishes to requeen towards the close of the honey season, may rear by the above method a large number of good queens, rear the cells during the honey-flow, the most favorable time to rear them, and have them ready to take the place of removed queens, too old, mismated or otherwise inferior. No one is better placed to select good breeding stock than the honey-producer himself, but it requires close watching and keeping a correct and careful record. Herein the honey-producer often fails.

Naples, N. Y.

* * *

Judging Queens as to Their Value as Breeders

BY G. M. DOOLITTLE.

"Will Mr. Doolittle tell the readers of the American Bee Journal how queens are judged regarding their value as breeders? Some of my bee-keeping neighbors claim that they are mostly judged as to color. But I can not think this is so, for the amount of honey produced by the offspring of any queen is the main thing looked after by our best apiarists."—SUBSCRIBER.

Of course, color must have something to do with the judging of queens, just the same as it does, of necessity, when poultry-men purchase White Leghorn, Black Orpington, Barred Rock, etc., for perpetuating the kind of fowls they desire to use for egg-laying purposes. Does any one suppose that any man desiring to improve his White Leghorn flock would be satisfied in using ing any bird which gave anything but white feathers? I hear you all saying, "That is a fool question." Yes, but is it any more so than to receive a queen for pure Italian when, with a magnifying glass, she shows nothing but black on her abdomen? Any customer of a queen-breeder advertising Italian queens expects to receive one having some (or more) yellow about her body. Otherwise he or she will be a "dissatisfied customer." So color, of necessity, must play a certain part in judging queens of any race or variety. But this need be only a part.

Probably the point looking toward the best results from any given queen, is the way or manner in which she deposits her eggs in the cells. A really good queen attaches her eggs very nearly in the center of the bottom of all cells in which she lays. I would hardly be willing to use as a breeder any queen that did not do this. I have had queens which attached their eggs at any place in the bottoms of the cells, but all such proved of little value. Then I have had queens which deposited their eggs, fully one-fourth of them, on the sides of the cells, such proving themselves the least valuable of any. Again, a good queen, when putting her first brood of the season in the combs, should place an egg in nearly, if not quite, every cell in the circle in which these eggs are deposited. A queen which "scatters" may not be as poor as those spoken of above, but unless "hard pressed," I should hesitate to use such a one for the improvement of stock.

Now, in all of the above I have been speaking of selecting a queen reared in my own apiary. Many things tend to complicate matters where a queen is purchased from abroad. Queens sent from one part of the world to another are, by this sending, thrown into an abnormal condition which has a tendency to destroy the regularity of their laying, and often their individual usefulness; but this may not have any effect on the usefulness of their progeny. If there has been anything in the past that has puzzled queen-breeders, and given many of them no end of worry, it has been to send out a fine tested breeder, and then have the purchaser condemn her in unmeasured terms. And, while there may have been a lack of proper judging with some, it is more likely than otherwise that the most of such complainers had the truth on their side, and that it was the journey, the method of introduction, or something of that sort, that made the difference in the behavior of the queen, in the hands of the purchaser, from what it was in the hands of the breeder who sent her out. I have my doubts about any queen taken from her colony when she is in the height of her egg-laying, and kept from the same in a cage with a few bees from 6 to 24 hours, ever doing the good work she would have continued doing had she never been molested.

I remember of a man coming to my apiary some years ago, and after carefully looking over 5 or 6 of the colonies containing my best queens, he selected one which both he and I considered as good as there was in the yard. This was in August. The next spring he complained that the queen was "no good," and it was with much difficulty that I persuaded him to give the queen a further trial, especially by the way of her daughters. The result was, that I sold him more queens from this same strain of stock than I did to any other person.

If the minds of bee-keepers could, with proper understanding, grasp the thought of valuing a purchased queen for the stock that can be secured from her eggs, rather than for what *she* may do herself, a greater advantage would accrue to the bee-keeping world. As long as any purchaser is willing to test only the individual queen he buys, for the amount of honey *her* worker progeny produces, there will be little advance along the line of improvement of stock. And this comes home to me with the more force, as it was a matter I had to learn many years ago.

I bought many queens in the latter '70's and early '80's, but, like others, thought no further than that these queens bought must of themselves give better results than was given from the stock I already had, if they were to be of use to me. Finally, I had a queen sent to me by a noted breeder, saying she was of the best stock in the world. I tested her by giving her every advantage possible, but when fall came she had not sufficient bees for wintering. I was about to kill her, when the thought came to me to try her another year. So I gave her brood and honey from other colonies so that her colony came through the next spring in fine shape. But she did no better than the year before.

Getting exasperated, along the latter part of June, I went to her hive with the resolve to kill her, as nearly all my other colonies were doing good work in the sections, while her colony had not bees enough to cover the brood-combs, to say nothing about the sections. As I was about to end her "mortal career," the thought arrested me that this noted breeder would not send me a queen that he did not consider good enough to breed from. And if she was good enough for him, she should be good enough for me. So, instead of killing her, I started a batch of queen-cells from her young larvæ which were scattered about the combs to such an extent that I hesitated in the matter, even after I had begun. But before any of the young queens showed what they would be and do, the old queen died, and so I very nearly lost the use of a queen from the best stock I ever had in my apiary. In other words, had I killed this queen at either of the two times when I resolved to do so, I would have killed "the goose that laid the golden egg."

Allow me to let the reader see what this "golden egg" was. One of these queens was the mother of the colony which gave me 566 pounds of honey the next year. This honey was sold as follows: 466 pounds at 20 cents, and 100 pounds at 15 cents. Result, $108.20.

I never had a queen that centered her eggs any better than this one, nor one that put her brood in a more compact form when laying. And the others from the same batch of cells did good work, giving a better average than did the best queens I had before. I could hardly forgive myself for not breeding from the old queen during the whole time she was with me. However, this lesson made a more lasting impression on my mind than if it had been otherwise. And I gained enough by that one batch of queen-cells from her brood to give me far more profit than was received from all the honey sold from the whole apiary that year; for these queens, and especially this best one, were used to lay the foundation for my apiary, used all the way up to the present time.

S. A. Niver Picking Himalaya Blackberries at W. A. Pryal's in California.

In the above, I have given the readers of the American Bee Journal my ideas of how to judge queens reared in their own apiaries, and how the judging should be done of those procured from the different breeders of queens, and from the different apiarists throughout the world.

Borodino, N. Y.

Recognition of Bee-Keeping in Agricultural Colleges

BY L. V. FRANCE.

Read before the meeting of the Wisconsin Bee-Keepers' Association Feb. 20, 1912.

Last fall I entered the University intending to put in about a year and a half of other necessary work before being ready for much work in bees and bee-keeping. A little investigation showed that apiculture might be recognized at the Wisconsin Agricultural College some time in the future.

Soon after entering, in my visits to a number of bee-keepers in and about Madison, I learned that there were a couple of colonies of bees in the University orchard, and that some mention was made in an entomological course, of the anatomy of the honey-bee. I investigated and found two, not up-to-date, but nevertheless colonies of bees, each with one super, in one corner of the orchard. These two colonies were under the care of the Horticultural Department, and I found out little concerning them.

Just before Thanksgiving, and a number of times since, I have conferred with our economic entomologist, Prof. Sanders, who would have charge of any apicultural work when given, and I find that he is most anxious to introduce work with bees. Prof. Sanders has probably done his *full* share so far, in working for recognition of such work, and the State Bee-Keepers' Association will find in him one of the greatest, if not the greatest, helper in securing apicultural recognition by the Wisconsin College of Agriculture. When recognition is accomplished—and the earliest work that would be offered would be given the last quarter of the next University year, probably from the middle of April to June, 1913, unless present conditions change—the instruction and apiary work will be along the line of practical essentials of the best Wisconsin bee-keeping.

A number of students have inquired about work with bees, both this year and last. If a course in bee-keeping were offered, without doubt it would be well received, and would grow in popularity and strength. One result of University recognition of apiculture that would directly benefit the bee-keepers of today, would be the publication of valuable material free for the asking.

In addition, the University would be working with you in the study of the correct management and problems of Wisconsin bee-keeping.

The association could hold its meetings in one of the Agricultural buildings, where excellent accommodations are present for room, seating, lantern at any time, etc., and the College would gladly welcome you. About 3 weeks ago, during a period of about 2 weeks, nearly 20 different associations held meetings at the College of Agriculture, help being given by the College in numerous ways. Even though bee-keeping were not recognized at the College to the extent of offering courses or maintaining an apiary, you would still be royally welcomed, and all assistance possible would be given.

You may ask, do other State Agricultural Colleges recognize bee-keeping?

State Agricultural Colleges that *do not recognize* apiculture and *do not contemplate its recognition*, are as follows:

Alabama	Auburn
Arizona	Tucson
Connecticut	Storrs
Delaware	Newark
Florida	Gainesville
Georgia	Athens
Idaho	Moscow
Iowa	Ames
Louisiana	Baton Rouge
Maine	Orono
Missouri	Columbia
Mississippi	Agricultural College
Montana	Bozeman
Nevada	Reno
North Carolina	West Raleigh
North Dakota	Agricultural College
New Jersey	New Brunswick
South Carolina	Clemson College
Vermont	Burlington
West Virginia	Morgantown
Wyoming	Laramie
Washington	Pullman
Arkansas	Fayettville

State Agricultural Colleges that *do not recognize* apiculture, *but do contemplate* its recognition, are as follows:

Utah, Logan.

Kentucky, Lexington—Already recognized in entomology course. Have had experimental apiary for some years.

Illinois, Urbana.

Kansas, Manhattan—Informal instruction to interested students. Contemplate elective course.

Maryland, College Park.

Michigan, E. Lansing—Have recognized bee-keeping. Contemplate elective courses.

New Hampshire, Durham.

New York, Ithaca, at Cornell University.

State Agricultural Colleges that *recognize apiculture in entomology courses*:

Indiana, La Fayette—Part of entomology course No. 12.

Kentucky, Lexington—(See remarks in above paragraph.)

New Mexico, Agricultural College—Recognize bee-keeping in entomology course.

Oklahoma, Stillwater—Recognize bee-keeping concretely in entomology, have a small apiary, and often use bees in the extension work of the College.

Texas, College Station—Recognize bee-keeping in entomology course; some work in apiary given.

State Agricultural Colleges that *do recognize bee-keeping in bee-keeping courses*:

California, Berkeley—3 courses, 1st apiculture, 2d apiary, 3d research. Have had apicultural courses for nearly 20 years. 75 students in 1910-1911.

Canada, Guelph—More recognition than in any other North American Agricultural College.

Colorado, Fort Collins—Understood that C. P. Gillette will give a course.

Massachusetts, Amherst One regular course; a short course; and a correspondence course.

Minnesota, Minneapolis—One course and an apiary.

Nebraska, Lincoln—One hour course; apiary contemplated.

Ohio, Columbus—E. R. Root gives a course of lectures in winter. One course is offered.

Oregon, Corvallis—One course; the short course students get lectures on bee-keeping. 20 students in the course offered, in January, 1912.

Pennsylvania, State College—"A rather imperfect correspondence course."

Rhode Island, Kingston—Mr. A. C. Miller gives a summer course.

South Dakota, Brookings—Summer School Course.

Tennessee, Knoxville—A short course in bee-keeping offered; a spring course contemplated; there is sufficient demand for a year course; have an apiary of 16 colonies of 3 and 5 banded Italians.

Let us note a few figures from the 1910 census concerning Wisconsin and our five close neighboring States:

1910 Census

State	Farms with Bees	Col's. Bees Rept'd	Value	Value per Col'y	Remarks concerning college recognition.
Iowa	28,935	160,025	$517,300	$3.23	No recognition, and none contemplated.
Illinois	29,741	155,846	487,700	3.12	Contemplates recognition.
Michigan	16,802	115,274	446,500	3.87	Recognized api. Contemplate elec. courses.
Wisconsin	10,391	95,638	360,500	3.76	Contemplate recognition.
Indiana	19,487	80,938	230,500	2.84	A good part of Entomology No. 12.
Minnesota	9,522	56,677	221,800	3.91	A two-fifths course and apiary.

Conditions are somewhat similar in these 6 States.

You will note that the States are arranged in the order of the value of the bees, Iowa being first. Also note that Illinois is highest in the number of farms reporting bees, but that she is second in colonies of bees reported, Iowa being first. The value, per colony, is highest in Minnesota. Wisconsin stands fifth in farms reporting bees, fourth in colonies of bees reported, and in value of the bees, and third in value per colony. Note that Minnesota stands sixth and Wisconsin fifth in number of farms reporting bees, and that, on the average, practically 6 colonies are found on each farm reporting bees in Minnesota, but in Wisconsin practically 9 colonies, on the average, are found on each farm reporting bees. For Michigan the average number of colonies reported per farm is practically 7, for Indiana 4, for Iowa 6, and for Illinois 5. We further note that the Minnesota Agricultural College has a course in bee-keeping; Indiana has a good part of entomology 12; Michigan has had such work, and contemplates further work; Illinois contemplates recognizing bee-keeping, and Wisconsin, also. Can Wisconsin go a step further and keep pace with our neighboring States? Shall we be like Iowa, with the greatest value of bees and largest number of colonies reported of the 6 States, and have no thought given to bee-keeping in the College of Agriculture; or like Minnesota with the least value of bees and least number of colonies reported have a course in bee-keeping and an apiary?

About 2 weeks ago I had some difficulty in making out a satisfactory program for the second semester, or second half year's work. I had a three-fifths or four-fifths course to secure in order to obtain my desired amount of work, and not finding desired courses available, I went to Prof. Sanders and asked if I could not do a little research work in bees? "I hardly see how you can do anything. We haven't a single thing for you to work with. It might be possible, however, for you to go on with your Agricultural College work and such work if you wished." So, with that work, a study of Wisconsin bee-keeping conditions, and a study of the development of Wisconsin bee-keeping is being taken up, and I feel that the College of Agriculture here will secure the best and most correct information requested, from bee-keepers who are members of the State Bee-Keepers' Association, for I know, because you *are* members, and are here at an expenditure of time and money, that you are sincerely interested in any

S. A. Niver Capturing a Swarm at W. A. Pryal's, With a Niver Extension Swarm-Catcher.

endeavor that works for the betterment of Wisconsin bee-keeping.

Wisconsin University is ready to recognize apiculture. Why is it not done? A real demand for its recognition is necessary, and who is more capable of voicing a real demand for such recognition, and more sincere in voicing that demand than the State Bee-Keepers' Association? If your meeting had been held in January instead of this month, and such a demand as I mention, in the form of a request, had been handed in so that its influence could have been brought to bear about two weeks ago, when Prof. Sanders conferred on this subject with Dean Russell, a trial course in bee-keeping, with a small apiary offered, in the Summer School this coming summer, might have been secured.

Madison, Wis.

CONVENTION PROCEEDINGS

Report of the New York State Bee-Keepers' Meeting

The annual meeting of the New York State Bee-Keepers' Association was held in Syracuse, N. Y., Jan. 30 and 31, 1912. The meeting was well attended.

Mr. E. B. Tyrrell, editor of the Bee-Keepers' Review, gave an address on co-operation. It seemed to be the general sentiment that co-operation is a good thing, and a coming thing.

H. L. Case and Oscar Dines gave a description and illustration of the plan they use in rearing queens. This plan greatly simplifies the labor of queen-rearing, yet it produces as good queens as the more laborious method.

Prof. H. A. Surface, of Harrisburg, Pa., gave an address on, "Better Keep Bees, Keep Better Bees, Keep Bees Better, the Cause and Prevention of Swarming." Among the points mentioned were, that orchardists should keep bees unless others kept some near them; that we should constantly seek to improve our strain of bees; that we should thoroughly ripen our honey on the hive; that swarming is caused by conditions that tend to make the bees uncomfortable, and is largely prevented by removing these conditions; that non-swarming strains are apt to swarm if these conditions are present.

Mr. R. F. Holtermann gave an address on the control of swarming. This address contained a number of points worth knowing.

The discussion on bee-diseases showed that since the nature of European foul brood has come to be quite generally understood, it has lost most of its terror to the bee-keepers of this State.

There was considerable anxiety manifested as to the nature of the Isle of Wight disease. The State Department of Agriculture was asked to investigate this disease to the end that they might be in a position to assist in its prompt suppression should it appear. The United States government was asked to take such measures as might be necessary to prevent the importation of this disease, even should it be necessary for a time to prohibit the importation of bees or honey from places where the disease is known or believed to exist.

A vote of thanks was given Dr. Harvey W. Wiley, for his untiring zeal and unswerving integrity in the enforcement of pure food laws.

IRVING KENYON, *Sec.*

Camillus, N. Y.

Wisconsin Association Meeting

The 33d annual convention of the Wisconsin State Bee-Keepers' Association was called to order at 10:30 a.m., by Vice-President F. Wilcox, at Madison, Wis., Feb. 20, 1912.

The minutes of the last convention were read and approved. The Secretary's report was read, followed by the Treasurer's report, and, on motion, both reports were accepted.

The Question-Box was then taken up.

QUESTION—Considering the unusually cold weather, what may be the results of outdoor wintering? ANS.—It all depends upon the preparation made for outdoor wintering, and the condition of the colony. All colonies put in strong, with food near the cluster, and properly prepared, should winter all right; the weak colonies will probably perish. Continued cold is better than open winter weather. The entrances should be kept open, as the bees will worry when they find themselves shut in.

QUES.—Is it profitable to wrap hives with building paper in the spring, after being taken out of the cellar? ANS.—It was the decided opinion of those who are in the habit of covering their hives in this way that it is a success, and well pays for the expense and trouble. Express paper was claimed to be better than building paper, as it will not break in folding. Mr. Allen showed a sample of heavy paper that he used, that will not break in folding.

QUES.—How much bisulphide of carbon should be used for a pile of comb-honey supers, piled 15 high? ANS.—It depends upon the tightness of the pile. Mr. Ochsner uses burning sulphur in a closed room. Mr. Allen thinks 15 supers too high, and one ounce enough for a pile. Most of the members never find the need of any such treatment for new comb honey. Store it at once in a place by itself, and away from the old combs, as moths will not get into comb honey, unless exposed near brood or extracting combs.

QUES.—Is it advisable to take bees out of the cellar March 1st, and leave them out if they are showing any signs of dysentery at this time? ANS.—It depends upon what the weather is March 1st. If favorable, give them a flight and return them to the cellar. Mr. Chase put them out March 17th, covered them with paper and left them out. He believes it saved his bees. A bee-keeper with many bees can not put them out and in as easily as one with only a few, and must necessarily take some chances.

QUES.—Is it necessary to feed strong colonies in the spring, for the purpose of stimulating brood-rearing? ANS.—Most of the members advised letting them alone, if they have plenty of stores. It might be advisable, in a case where there is no early bloom of any kind for the bees to work on. Too much feeding creates suspicion of making sugar honey, and should be avoided. If one colony has honey to spare, give to the one short.

The convention adjourned to meet at 1:30 p.m.

AFTERNOON SESSION.

The convention was called to order by the President, Jacob Huffman, at 1:45 p.m.

On motion, and by unanimous vote, the visitors who were present, consisting of C. P. Dadant, of Hamilton, Ill., George W. York, of Chicago, Ill., and Paul Hunten, of Colorado, were made honorary members of this Association.

QUES.—Is there any race of bees ahead of the 3-banded Italians? ANS.—Some claim a decided preference for the Carniolans, giving good reasons, but most of the bee-keepers favor the Italians.

QUES.—Do any of the golden Italians come up to the 3-banded for honey or wintering? ANS.—The difference between the 3-banded and golden Italians is considered largely a matter of fancy.

QUES.—Is the Jones system a sure control of swarming, when running for comb honey? ANS.—This system finds no favor with any one here. It is too radical, too weakening, and the result not always sure.

QUES.—Which is better in a dry cellar, bottoms off and covers on, or both bottoms and covers off with quilts on top? ANS.—Bottoms off, with tight covers.

QUES.—How do you fill 60-pound cans? Gross weight 60 pounds, or do you put 60 pounds into the can? ANS.—It should be 60 pounds net weight in the can, if you sell it for 60 pounds. Both the federal and the Wisconsin laws are stringently positive on this question; a seller must furnish the weight and measure claimed.

QUES.—Are the Carniolans any better for comb honey than the Italians? ANS.—Mr. Ochsner says they are better workers, also make a better and smoother capping, are very gentle, and are handled without a veil. He claims they are distinct from either the Italians or blacks.

The convention then proceeded to the reading of the papers presented by the following members: Gustav Gross, H. H. Moe, which was read by the Secretary, F. Wilcox, George W. York, E. D. Ochsner, A. C. Allen, Harry Lathrop.

After the reading of the papers the President declared a recess, to give the awarding committee time to report on them.

The committee on awards reported as follows:

1st	Premium,	A. C. Allen	$5 00
2d	"	E. D. Ochsner	3 00
3d	"	Harry Lathrop	2 00
4th	"	Gustav Gross	1 00

The report was accepted, and the Secretary was authorized to draw orders for the several amounts.

The following resolution was presented by F. Wilcox;

Resolved, That the Wisconsin State Bee-Keepers' Association, in convention assembled, does hereby become a branch of the National Association, and ask recognition when 25 or more of our members shall have become members of the National Association.

On motion the resolution was adopted.

EVENING SESSION.

The convention was called to order by the President at 8 p.m.

QUES.—Which is the better way to get early increase, by natural swarming or by dividing? ANS.—Divide and furnish each with a young queen. Do not divide your strongest colonies, but let them alone. If you are bound to divide, use your medium colonies for that purpose, and let the weak ones alone.

QUES.—What feed is the best for fall and spring feeding? ANS.—Honey is always the best, and sugar syrup is the next best. In the spring is the only time for stimulative feeding.

QUES.—Is a steam-heated knife practical

for a small bee-keeper, and if so, in what way? ANS.—You can not afford to be without one, if you have only 10 colonies. It costs something, but the money expended saves time, and it does better work.

QUES.—Which is the better can for shipping, the square or the round? ANS.—The square can is preferable, because it packs better and closer in the box, and is consequently better for shipping.

QUES.—Should cement coated nails be used in nailing covers on shipping-cases? ANS.—They are very objectionable, as they split and break the cover in pulling them out. The attention of the manufacturers should be called to this matter.

QUES.—What can I do to prevent bees from getting moldy and damp, wintering in a damp cellar? ANS.—Put bundles of dry straw on the cellar bottom before putting the bees in. The straw will gather moisture and may help you.

QUES.—What is the best way to prevent all increase? ANS.—Shake the bees or swarm into an empty hive or box, and keep them there for 48 hours, and then shake them into the old hive, after having first destroyed all queen-cells.

QUES.—Is too much pollen detrimental to successful wintering? ANS.—It will not hurt them if they do not eat it But they will winter better without any pollen in the hive.

QUES.—Is it practical to use a capping melter at all times, when extracting honey? ANS—It may be practical, but it is not advisable, as it will usually darken the honey.

QUES.—Does clipping affect a queen in laying? ANS.—If properly clipped it will not affect her in any way.

QUES.—Will the Kretchmer wax press do as good work as any other? ANS.—Mr. France and others think it as good as any other, and possibly better than some, excepting the Hershiser.

The convention adjourned until 9 a.m. Wednesday.

WEDNESDAY—MORNING SESSION.

Jacob Huffman's bill of $8.65, traveling expenses for attending the National convention at Minneapolis as a delegate, was read, and, on motion, ordered paid.

On motion, the convention proceeded to the election of officers by ballot for the ensuing year, and the following were declared elected:

President, Jacob Huffman; Vice-President, F. Wilcox; Secretary, Gus Dittmer; Treasurer, A. C. Allen; delegate to National, A. C. Allen; alternate, Harry Lathrop.

On motion, F. Wilcox was selected for judge of the apiarian exhibits at the State Fair, to be recommended for appointment by the State Board of Agriculture.

On motion, F. Wilcox, E. D. Ochsner, and A. L. Kleeber were appointed as a committee for revising and recommending premiums on apiarian exhibits.

Mr. Lloyd V. France addressed the convention on "The introduction of an apiarian course in connection with the agricultural course at the Wisconsin University."

Mr. France then asked the opinion of the Association as to the advisability of establishing such a course, and the prevailing opinion being in favor of such a proposition, a committee composed of Lloyd V. France, Herman E. Gloege, and L. W. Parman was appointed to consider the matter, draft resolutions, and report at the afternoon session. Said committee to be permanent, and with power to act in any manner necessary to obtain the course.

The convention adjourned until 1:30 p.m.

AFTERNOON SESSION.

The Committee on Apiarian Course at the Agricultural College, reported the following resolution, which, on motion, was adopted by a unanimous vote of the convenion:

Resolved, That the Wisconsin State Bee-Keepers' Association request the Agricultural College at Madison, to introduce and add bee-keeping to its regular work as soon as possible, and that we assure the College of our hearty co-operation and support as an association, and as individual bee-keepers. And in the event said College shall accept this resolution, the State Bee-Keepers' Association will gladly donate a few colonies of bees and supplies to introduce the same.

Signed,
L. V. FRANCE,
HERMAN E. GLOEGE,
L. W. PARMAN.

The above resolution was ordered countersigned by the President and Secretary, and officially presented to the proper authorities of the Agricultural College.

The committee on resolutions presented the following:

Resolved, That the Wisconsin State Bee-Keepers' Association deplores the loss by death of one of its oldest members, Mr. A. J. Ochsner, of Prairie du Sac, who, from the earliest days of its organization, did all that he could to foster whatever was best for Wisconsin bee-keeping, and that we extend to his family our sincere sympathy in their loss.

Resolved, That we as members of the Wisconsin State Bee-Keepers' Association consider it the paramount duty of each one to attend all the sessions of the annual meetings each year, unless prevented by some unavoidable cause, and that it is the duty of each one to encourage other bee-keepers to become members.

Resolved, That this Association is thankful for the kindness of the officials of Dane county in allowing us the use of a room in the Court House for our convention.

Signed,
HARRY LATHROP,
HERMAN F. GLOEGE,
L. W. PARMAN.

The above resolutions were adopted unanimously.

Mr. Ochsner spoke at length on the subject of a better and more satisfactory grading of honey, to be established by the next National convention, and suggested that our delegate work to that end.

Prof. Sanders, of the Agricultural College, being present, addressed the convention on the subject of adding apiculture to the agricultural course. His talk was well received, and pleased the members.

After an informal discussion of papers that had been read at this convention, the convention adjourned at 3:15 p.m.

GUS DITTMER, *Sec.*

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

What to Do for Wax-Worms

What can I do for worms in bees?

CUBA.

ANSWER.—The best remedy for wax-worms, as the larvæ of the bee-moth are called, is a big lot of bees. The worms are not likely to get much of a start in a rousing colony, but a weak, discouraged colony is their proper prey. If your bees are blacks, you will find that changing to Italian blood will be a great help. Indeed a colony of good Italian blood, even if quite weak, will keep the worms at bay.

If the worms have made a fair start, it may be worth while to give the bees some help. At least you can dig out the big fellows. Take a wire nail and dig a hole into one end of the gallery that the worm has built. Now start at the other end, and as you dig the gallery open the worm will crawl along and come out of the hole you first made, when you can dispatch it.

Preventing Swarming With Alley Queen-Trap and by Shaking

1. Can I use an Alley queen-trap to catch the queen in swarming-time, or will the bees kill her?

2. How can I tell when to shake a swarm to stop it from swarming?

NEW YORK.

ANSWERS.—1. You can use an Alley queen-trap, and when the bees swarm the queen will be caught in the trap, and when the swarm discovers the lack of a queen it will return. But that leaves you still to attend to the case. You may take all but one frame of brood, put it in a new hive with enough bees to keep the brood from chilling; set this on a new stand (only be sure not to shake the combs so as to kill the queen-cells), and leave the rest of the bees with the queen on the old stand with the one frame of brood, filling up the hive with drawn combs or frames filled with foundation. If you prefer no dividing, you may remove or kill the old queen and kill all queen-cells but one, leaving brood and all on the old stand.

2. If you can tell when swarming begins in your neighborhood, shake at time of very first swarming. But if a colony is not very strong, it will be better not to shake until it becomes pretty strong. All this is rather indefinite. Better be definite. Look in the hive and see if the queen-cells are present. If not, wait a week or 10 days and look again. If you never find any started by looking every week or 10 days, let them alone and be thankful that you have such an unusual thing as a colony that has no desire to swarm. If you find queen-cells started, shake—or at least shake before any cells are sealed, for the colony will swarm about the time the first cell is sealed.

Prime and After-Swarms—Entrances at End or Side of Hive

1. What do you do when you have a prime and after-swarm unite; or don't you have them do those tricks? They do so with me, and then they kill both queens. The bees have been swarming more than usual. My first one issued April 2d, and I have had from one to 10 swarms every day for a week—not less than 5, and some days 7 or 8. Maybe there wasn't some humming around here.

2. One man from Texas said that it was generally understood and believed that bees get more air with an opening in the end rather than in the side of the hive. I don't believe they get more air from the end than from the side. I make my own hives, and they open at the side, except a few that I have gotten of other people, which have their entrances at the end. The bees in hives opening at the side do better, and we have some warm weather down here.

LOUISIANA.

ANSWERS.—1. Where much swarming is going on it is not a very uncommon thing for two swarms to unite, sometimes more than two, and they may be prime swarms or after-swarms, or both. It may happen, as in your case, that both queens are killed The usual thing, however, is that one of the queens is left, and in the case of a laying and a virgin queen, the laying queen is more likely to be left. If the after-swarm is small there may be no loss in having the two unite. Neither queen is likely to be killed immediately, but both balled for some time.

So the bees may be divided, part put in one hive and part in another, and a queen given to each.

But it is better to prevent all after-swarms in the way so often described. Hive the prime swarm and set it on the old stand, placing the mother colony close beside it, facing the same way; then a week later move the mother colony to a new stand some distance away.

2. In this country it is almost the universal custom for hives to be made with frames running at right angles to the entrance, or, as you call it, with the hives opening at the end. In Europe it is quite common to have the frames run parallel to the entrance. The latter is called the warm arrangement, and the former the cold arrangement. With the cold arrangement it looks as if the air has the same chance at all the frames, and so it is supposed that it is colder. The probability is that the difference is not so very great either way. At any rate, it is the right thing for you to use the kind that does the best with you.

Does the Catalpa Blossom Yield Honey?

I wrote to an experienced bee-keeper in New Jersey, asking if he had had any success in securing honey from the catalpa-tree? He replied thus: "So far as my observation extends, I can not recall a single instance where bees were seen on catalpa blossoms, and I have looked for them time and time again in these monstrous flowers. What a pity that they are as dry of nectar as bleached sawdust!"

Noting that the "A B C of Bee Culture" classes the catalpa-tree among honey-plants, will you kindly let me know whether you think my New Jersey correspondent is correct in his belief? CONNECTICUT.

ANSWER.—It is entirely possible that your correspondent and the "A B C" are both correct. Bees are discriminating in their tastes, and have decided preferences. This year dandelions were in bloom abundantly, and scarcely a bee was to be seen on them. A few days later bees were on them a-plenty. I suppose that at first they had fruit-bloom enough to occupy them, and cared less for dandelions. When fruit-bloom became scarce dandelions had their full attention. Strawberries have always been plenty on my place—some years by the acre—so I had good opportunity to observe them, and for years I never saw a bee on them;- but afterward I did see bees on strawberry-bloom. So it may easily be that your correspondent never saw bees working on catalpa while they have been seen elsewhere; and it may also be that your New Jersey friend will yet see catalpas humming with bees.

Keeping Out-Apiaries—Clipping Queens—Protecting Combs

1. Suppose you wanted to keep as many as 300 colonies of bees, but did not want to bother with much work in out-apiaries, how would this plan be: Have about 150 colonies in your home yard, then in 2 or 3 outyards have 20 to 50 nuclei, or 10 colonies in each, and increase to about 40? There would then be no swarming and few trips.

2. Would it be advisable to clip the wings of golden untested queens before releasing in queenless nuclei for fear the queens might fly away?

3. If empty drawn combs remain in the hives all summer, and the hives are clean, is there danger of the combs becoming moldy? If such hives were not to be used, would you close up the entrances to keep out moths? ILLINOIS.

ANSWERS.—1. I don't understand just what the details are, but it seems you depend upon the home apiary for honey crops, leaving the out-apiaries to grow colonies from nuclei. That will work all right for the out-apiaries; but when you talk about 150 in the home yard, it raises the question whether you have pasturage for them. I suspect that in most places in Illinois, in an average year, 75 colonies will yield more surplus than 150. Stop and figure a little. Suppose we have 75 colonies in a locality so good that by using up all the honey within reach they will give a surplus of 100 pounds per colony. Instead of 75 colonies, make the number 150, and see how we come out. It is estimated that 200 pounds of honey is consumed by a colony in a year for its own use. When we had 75 colonies we got 100 pounds of surplus beside the 200 pounds needed for self-support of each colony. That made 300 pounds gathered by each colony, or 22,500 pounds in all, and that cleaned the field. When we keep 150 colonies, and allow 200 pounds to each for their own use, that will require 150 times 200 pounds, or 30,000 pounds. But the field affords only 22,500 pounds, so we will have no surplus, and will have to feed 7,500 pounds to keep the bees alive. I don't know that it would turn out just that way with you, but at least you "better look a little out"

2. Yes.

3. No danger of mold unless you keep the combs in a cellar or damp room. I've some question whether you can close the hives tight enough to keep out moths. They squeeze through a very small crack. But if the combs are in a close building the moths are not likely to find them. Yet it is a pretty safe guess that if colonies died on them the worms are there already. In that case whatever combs can not be put in the care of the bees should be treated with sulphur fumes, or, still better, with bisulfide of carbon.

Age of Worker When it First Goes Afield

How many days from the time the worker hatches until it goes to gather honey? MISSOURI.

ANSWER.—It is generally understood that a worker goes afield when 16 days old. But the wise little creatures know how to adapt themselves to circumstances without following any rigid rule. One time I had a valuable queen to introduce. Over a strong colony I put an empty hive, with wire-cloth between the two stories. In the empty hive I put frames of sealed brood with young bees just ready to hatch, but not a bee. I put in the queen and closed up tight, so no bee could get in or out. Five days later I gave a very small entrance, and the bees flew. A little later some of the bees returned with loads of pollen. Those babies, only 5 days old, were doing work that under ordinary circumstances they would not have done until three times as old. So in the economy of the hive, while it may be true that bees generally go afield when 16 days old, the likelihood is that they accommodate themselves to circumstances. If conditions are such that there is an unusual need of nurses, some of the bees may not go afield until considerably more than 16 days old, and *vice versa*.

Large Mortality of Bees, What Was the Cause?

Please give me your idea as to the cause of my bees all dying this spring. I shall try to explain the situation as fully as possible. They were all placed in the cellar in November in the very best condition, with plenty of stores and lots of bees; very strong. The cellar is the same as it always has been. I have wintered bees there for the last 4 winters, not so very cold, but this winter it did freeze the potatoes, but do not think it was the cold, or the dampness, that did the killing, as the cellar is perfectly dry. I watched them, off and on, all winter, and did not discover anything wrong until the mild spell of weather came, and all at once, when I looked at them, lo and behold, the cellar was strewn with dead bees, and the entrances were all filled with dead bees, and the odor from them was something terrible. I raked all the dead ones out that I could, and put on new bottom-boards, and as soon as there was enough snow gone so I could find a clear place, I took them out of the cellar, but not for a few weeks after I had cleaned out the hives, as the weather and snow would not allow it—we had a very hard and long spring.

But when they were set out I stayed at home and watched them, and as soon as they got warmed up enough in the sun to move out, they seemed to crawl right out of the hive on the grass and away from the hive, as if they were sick and wanted to get away and die, and all of them did die but one colony. I have just lost it, also. I think, however, that it would have pulled through if the weather had warmed up in time, although there was only a handful of bees when I set it out on the stand.

I have an idea that it must be something that they gathered for stores last fall that killed them, as we had a very dry summer here last year until the fall rain came, then they got considerable honey from weeds, etc. It might have been what is called honey-dew. I am anxious to learn what the trouble was, and would be much please if you would give the cause. All those that have been here in this neighborhood lost their bees in exactly the same way, and my neighbor had his in a cellar that never freezes, and is always about the same temperature, as they have a furnace. MINNESOTA.

ANSWER.—I don't know. That's really the best answer I have on hand to fit the case. Yet you might prefer to have me do some guessing, and it may be some comfort to you to find that I don't know so much more than you. According to reports the mortality among bees was so general last winter that the cause or causes must have been somewhat general. The season was poor. One result of that was that little or no early honey was left in the hive for winter stores. In a good season all available space in the brood-chamber will be filled with honey before any goes in the supers, and so it happens that a good part of the winter stores, in a good season, will consist of early honey. Bees have their preference, and I suppose always take the best that is going. In a good season they have no trouble in finding honey of the best quality, and pay little or no attention to honey-dew or other inferior stores that may be had for winter. When nothing else is to be had, they will gather unwholesome stores rather than lie idle. The failure of pasturage had for one result that brood-rearing stopped early, and so the bees were mostly old, ready to succumb to hardships. The winter was cold, and, what is worse, it was long continued cold. Some of these things, and possibly all, may have had something to do with your case. *Bad food*, with *unusual cold*, is a bad combination for *old* bees.

Introducing Queens—What Size Extractor to Get

1. Please tell me how to introduce a queen. I am a beginner.

2. I am thinking of buying an extractor. What kind would you advise me to get? How about the Novice 4-frame non-reversible extractor? Is the Cowan rapid-reversible any better? Is the 4-frame too big, or not? Does the reversing help any? NEW YORK.

ANSWERS.—1. To tell all the ways by which queens have been introduced would be a long story. And when you have the whole story it will have a postscript saying, that by any and every form of queen-introduction in common use there is an element of chance, and you must expect to lose a certain percentage. There is a plan that is absolutely safe, but it doesn't come under the head of the plans "in common use," for unless a very valuable queen is in question it may be better to take a less troublesome plan and take the risk.

Anyhow, here is the safe plan. Put into a hive combs of brood mostly sealed. It will be better if it is all sealed, and you may have such combs by getting ready in advance. Put the combs in an upper story over a strong colony, with an excluder between the two stories—the queen in the lower story. Of course, you can have any number, from two combs up to a hiveful, only the more you have the stronger your colony will be. In about 8 days all the brood will be sealed. Then brush off *every* bee from these combs and put them in a separate hive, put in the queen, and close it up bee-tight. Unless you feel sure the weather will be warm enough for the next few days, so that the temperature will not go below about 70 degrees, day or night, you must take the hive into some room that will not go below 70 degrees. Or, you may put it over a strong colony, over wire-cloth, so that the heat will come up, but no bees. In 5 or 6 days you may set the hive on its intended stand, allowing an entrance large enough for only a bee or two at a time, enlarging the entrance in a few days as needed. Thus, you see, there are never any strange bees to endanger the queen, for no bee present has ever known any other queen.

Perhaps by far the greater number of queens is introduced by means of the introducing cage provisioned with queen-candy. The bees eat away the candy in the tube, taking a day or less for it, sometimes a good deal more, and when the candy is eaten out, the queen walks quietly out of the cage upon the combs as if she belonged there.

The general practice is to remove the old queen at the time of putting in the new caged queen. I think I have had a little better success by removing the old queen a day or two in advance.

Bees are less likely to disturb the new queen when honey is coming in freely, and if that is not the case, it is well to feed. If the hive contains no very old bees, there is less risk than otherwise. So, if you want to take extra precaution, do this: Set the hive off its stand and put an empty hive in its place. Take one frame of brood with adhering bees from the old hive and put it in the new one on the old stand. Put this brood at one side of the hive, and put beside it 3 or 4 frames that may be empty, or may contain foundation or drawn combs. Cover up the hive on the old stand, and set on top of it the old hive. You understand there is no communication whatever between the two hives. By the time the bees have liberated the caged queen there will no longer be any but the younger bees in the upper hive, for each bee that returns from the field will go straight to the lower entrance where it has been used to going. About 3 days later take away the lower hive, set the upper hive back on the stand, and return the frame of brood that was taken away. It may be that you want to increase at the same time that you introduce the new queen. In that case leave the old queen in the new hive on the old stand, and instead of putting the old hive on top of the new one, put the old hive on a new stand. Then nothing further is to be done. You may, however, prefer to shake off a good portion of the bees into a new hive at the time of taking away the old one. That will give you a shaken swarm, and the likelihood is that you will get more surplus honey from the hive with the old queen on the old stand than you otherwise would from both hives.

That's a little about introducing queens.

2. It is generally well to make sure that your extractor is too large rather than too small, taking into account the possibility of increasing the number of your colonies. So if you don't object to the difference in price it may be well to get the 4-frame. The reversing is a decided advantage, although one kind does as good work as the other.

Reports And Experiences

Wintered 39 Colonies—No Loss

I put into the cellar 39 colonies of bees on Nov. 10th. I took them out April 10th in good order, without any loss. Bees have been doing fine the last 10 days.

Darlington, Wis., May 2. John Cline.

Answered Questions Helped Success

I had a letter written to me in 1806, by your father, Chas. Dadant, in answer to desired information regarding some special points on bees, to which I largely owe my success in apiculture. In 1894 I started with 6 hives of bees and $4.00 in cash, and worked up to 400 colonies in 8 years. M. Brown.

Argenta, Ark., May 12.

Prospects Bright for Sage Honey

The central part of the State reports very favorable rains, and in some sections they had as high as 4 inches. And as we have had more rain the past 2 days, the outlook appears better and brighter for sage honey.

From the reports of the effect of the cold weather through the Central and Eastern States the loss of bees has been very heavy, and I would judge that California will be called upon to furnish some early queens for the bee-keepers throughout the country.

J. C. Frohliger.

Berkeley, Calif., April 29.

Success in Wintering on Summer Stands

As my plan of packing bees for winter, given in the American Bee Journal last fall, in which I advised placing an inverted wooden butter dish, holding about a quart, over the frames as a clustering place for the bees in cold weather, was criticised by some bee-keepers, I will now report that out of 78 colonies so packed 75 came through our unusually long and severe winter in first-class condition, and the 3 that perished were found to be short in stores. I never before had stronger colonies at this time of year.

Isaac F. Tillinghast.

Factoryville, Pa., April 25.

Leather-Colored Italians Preferred

You quote me on page 12 as saying lighter-colored queens. If I wrote that I made a mistake, as I intended to say leather-colored. I think no more of the goldens than I do of black queens. I think they will have foul brood just about the same. I shall have to lock horns with J. L. Byer, also with the Editor of Gleanings in Bee Culture, if they refer to leather color. Not one of my leather-colored bees caught foul brood. While I had a few blacks in my own yard, every one that I bought and all my other blacks and goldens had foul brood that fall, and I destroyed them, which I would not do now. One of my neighbor's bees had foul brood the same time, and I let him have some queens. That was 5 years ago, and he has not seen any signs of it since. I have lost quite a lot of colonies by foul brood, but in all it does not make me feel very bad, as it has cleaned up every black colony within several miles of my place. I offered to give queens, but they said black bees were good enough for them. Along in 1860 to 1875 this town had about 2500 colonies. Most every farmer kept from one to 100. Now 160 will cover all of them. I have most of them. As nearly as I can learn, the farmers within 20 miles have lost about 50 percent. I lost about 20 percent. C. M. Lincoln.

West Rupert, Vt.

Saved 4 Out of 8 Colonies

I secured 8 colonies of bees during the winter, and have saved 4 of them, mice killed off one, and the others starved or froze to death.

I do not know a drone from a worker-bee, nor what the queen looks like. I do know that I enjoy eating honey, and that the work of the bee is, to me, very fascinating as I watch them, seemingly so wise and exceedingly industrious.

I am past 50 years old. I always wanted to keep bees, but hitherto have not been situated so it were possible. I am now on a little 15-acre farm 14 miles from Omaha. I am trying it. W. D. Stambaugh.

Richfield, Nebr., May 10.

Bee-Culture in Missouri

I have had several letters from parties living in the North, asking about Missouri as a bee-country. Our State now ranks fourth; it has ranked third in the past; there are said to be over 40,000 bee-keepers in the State; the last census did not give quite so many, but I deem the statistics very unreliable, as the bees were not counted in the cities and towns, and there are a great many so located. Over 200,000 colonies of bees have been enumerated, gathering over 6,000,000 pounds of honey in a year. But to count a part and leave out a part is of very little value as to our resources.

The State is not as well developed in bee-culture as it could be; while I am sure we have many bee-keepers who are up to date, thousands keep bees in a crude way. If they used good methods they could make it pay. I have missed only one season in 22 years in securing any honey at all, but in 3 different seasons I have secured 200 pounds of extracted honey per colony.

Fruit bloom in early spring, white clover coming soon after, and the Spanish-needles in the fall, are the best sources of honey crops, although there are many blossoms coming between these. I have secured two small crops from corn-tassels, one from heartsease, or the short jointed smartweed; then we have considerable golden-rod and other plants, but these honeys are mixed throughout the season. Of course, we have red clover; sweet clover is yielding largely in places and spreading, and alfalfa is being largely grown. While at the Kansas City meeting of our association last September, I went into Clay county to visit our new secretary, Mr. J. F. Diemer, at Liberty, and while there sampled some honey gathered from alfalfa by his bees.

I had several letters asking about the Ozark country. Some of our best bee-keepers are there and secure good crops of honey. Some parts of that country are yet unoccupied, or, in other words, much of it is still wild and rough, but many large orchards are located there, and it has a much milder climate than northern Missouri.

We had at one time over 250 members of our State Association, but many are neglecting to keep up their membership; it works quite a hardship upon those who remain faithful, to carry on the work. The State is capable of much improvement, and could yield much greater crops than have ever yet been secured. J. W. Rouse.

Mexico, Mo.

Weather Conditions in Southern California

The following letters will show how quickly conditions may change in California:

First Letter.

I presume I am giving you no news when I tell you Southern California has been hit harder this winter than ever before that I know of. November and December were very cold, and for 8 or 10 nights it was impossible to keep the frost out of the citrus orchards, and the result is over one-half of the fruit is worthless. Loss up into the millions. Then the rains refused to come, and today our grain-fields are dry, and the grain that came up with the less than 2 inches of rain to date stands ready to die. Our honey-plants that started 2 or 3 times to grow a little, are now so far gone that it is probable five-sixths of the bees will starve next summer. We intend sending a lot over to the fields in Imperial county, but the majority can not be taken there.

Farmers are in a panic over no prospects of pasture—for not a green blade of grass is to be seen, and the skies are as blue as in August. G. F. Merriam.

San Marcos, Calif., Feb. 27, 1912.

Second Letter.

February came and went without a drop of rain. The first one in 63 years. March was only 3 hours old when it began to rain, and has kept it up ever since, giving all California a good soaking, and changing the whole aspect of affairs. We have had over 3 inches. A telephone an hour ago says the barometer fell this forenoon to 29.60. The lowest seen here. G. F. Merriam.

San Marcos, Calif., March 12.

Third Letter.

Still it rains, and the soil is full of water, but the air is cold, and so little sunshine that things do not grow very well. But it is sure to get warm later. G. F. Merriam.

San Marcos, Calif., March 30.

The Sneeze-Weed or Bitter-Weed of the South

The weed referred to on page 150, May, 1912, is commonly known as sneeze-weed or bitter-weed. I give the following from the Bulletin on Texas honey-plants, issued at College Station, Tex., by Louis H. Scholl: "Sneeze-weed, bitter-weed, *Helenium tenuifolium Nutt.* Composite family, Compositæ."

"River bottoms, etc., extending from the Gulf of Mexico and Mississippi States to Western Texas (Coulter), abundant on open woodland prairies of Eastern Texas. Honey-yield good in favorable seasons; pollen; honey golden yellow, heavy body, but very

Souvenir Bee Postal Cards

We have 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with stanza of poetry, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for $1.10. Send all orders to the office of the American Bee Journal.

bitter, as if 50 percent quinine, and some pepper were added. June to October."

I have had considerable of this honey myself some seasons, and am sure it does yield honey. The writer of the article says bees never work on this until Sept. 15th, while the above gives it from June to October. I have found that bees never work on this in my locality when there is anything else to do, so this, perhaps, accounts for the difference. H. L. RUSSELL.

Whittaker, Tex., May 20.

Why I Like the Caucasian Bee

A number of years ago, when the United States Government distributed Caucasian queens among apiarists, I wanted one, and made application for it. They sent me one imported, and two home-bred for drone mothers.

The first season showed them to be very different from the Italians. So, through a friend in Russia, I got two queens from the shores of the Caspian Sea, but they proved to be mixed with too much yellow, and, therefore, the queens bred from them were not desirable; they sported.

Later I found the pure gray Caucasian bee, which proved to be non-sporting, and true to color. I, therefore, contracted to have my queens bred for me exclusively, and for 5 years have received queens direct.

I have been experimenting with bees since 1878 (I have more experience than wealth), and have now concluded that the Italian and Caucasian bees are the best.

The Caucasian bees come across the sea, at times, with not a dead bee in the cages, never more than a half dozen; not so with the Italian, although it may be in the line of transportation. I have had Caucasian queens 31 days on the voyage with hardly a dead bee.

Where I have introduced an Italian queen early in the season, I find Caucasian bees very late in the summer, showing them to be very long lived. In wintering, the other races do not compare with them; they live under very adverse circumstances if they have plenty of stores. They are extra prolific, and build up very fast. They never loaf nor lie out in great bunches as the Italians do, but are busy either in the hive or in the field. They are very gentle, and when I kill a saucy bee it is never a pure Caucasian. The color may not appeal to every one, for they look like the common black bee, but, upon close examination, they differ. When first hatched they are beautiful little lumps of gray.

The queens are very long lived. I have some doing service that were imported 3 years ago. There is less supersedure, and the queens hold out their egg production longer than any bee I have tried. They are are not excessive swarmers, as some claim, but they require larger hives. An ordinary queen will fill two 10-frame Langstroth bodies. Chas. W. Quinn, of Houston Heights, Tex., reports that a breeding-queen bought last year filled two Jumbo bodies with brood.

As honey-gatherers they can not be excelled, if even equaled. They are very fine comb-builders, and never show that watery color in cappings as is quite often the case with the yellow races.

They have one fault; their excessive gathering of propolis, which is used for closing cracks and sealing covers, and if the colony is weak they will diminish the entrance to a small opening, no doubt to repel robbers and keep out the cold. For the city apiarist who has neighbors near, the Caucasian is superior to any other kind. They can be handled by lamp-light, and never leave the comb to cawl and annoy you. They do not stop from field-work while handled in the daytime, as they will "zip, zip" away while you are examining the comb; the queens are a little more shy than the Italian.

They are excessive bur-comb builders if the bee-space is not to their liking. All light must be excluded to get the least burcombs and propolis. There is no bee equal to them in a fall flow, for the hive is filled with brood at all times except when in their winter quarters. A. D. D. WOOD.

Lansing, Mich., May 10.

SEVERAL SWARMS OF BEES CLUSTERED TOGETHER.

I am sending a picture of a swarm of bees. They were a beautiful sight to a bee-keeper, even if he were not desiring swarms. There were 3 (perhaps 4) swarms in the bunch, and they were hived in 2 separate hives, with 59 honey-sections placed on each. I should think there must have been 3 pecks of bees. Bees in the cellar seem quiet so far, and I am hoping for an early spring, as the winter has been cold and the snowfall light, with the ground frozen but little.

Caribou, Maine, Feb. 15. O. B. GRIFFIN.

MR. K. IWATA, EDITOR OF JAPANESE BEE PAPER.

"Bee-Keepers' Guide"

This book on bees is also known as the "Manual of the Apiary." It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American bee-book. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library. It has 544 pages, and 295 illustrations. Bound in cloth. Price, postpaid, $1.20; or with a year's subscription to the American Bee Journal—both for $1.90. Send all orders to the office of the American Bee Journal.

Wants, Exchanges, Etc.

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BEES AND QUEENS.

NUTMEG ITALIAN QUEENS, leather color, after June 1, $1.00. A. W. Yates, Hartford, Ct.

VIRGINIA QUEENS now ready. Untested 75c. Tested $1.00. All dead ones replaced.
6A3t S. Click, Mt. Jackson, Va.

FRONT line Italian Queens, well bred and hardy. After June 1, 6 for $4.50. Satisfaction guaranteed. J. B. Hollopeter, Pentz, Pa.

GOLDEN Italian Queens, Nuclei, and Full Colonies. See price-list in May number, page 131. Isaac F. Tillinghast, Factoryville, Pa.

WANTED — A man to work an apiary on shares, or will sell fine location near Trinidad. Address, 6A2t
R. S. Cotton, Trinidad, Cuba.

MY SYSTEM — Union bee-hive and Queen. Will increase both your colonies and honey crop, and improve your stock, making bee-keeping a real pleasure. Cash orders $10.00.
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QUEENS — Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have, Frank M. Keith,
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QUIRIN'S famous improved Italian queens nuclei, colonies, and bees by the lb., ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. 3A5t
Quirin-the-Queen-Breeder, Bellevue, Ohio.

FOR SALE—Italian queens bred from the best honey-gathering strains obtainable. Untested, 75c; Select, $1.00; Tested, $1.25; Select Tested, $1.50; Nuclei without queen, 1-frame, $1.50; 2-frame, $2.00; 3-frame, $2.75. For queens and nuclei in quantity lots, and bees by the pound, write for prices and circular. Robert B. Spicer, Wharton, N. J.

GOLDEN and 3-band Italian Queens (strictly free from disease). Tested Queens, $1.00 each; 3 for $2.75; 6 or more, 85 cts. each. Untested, 75c each; 3 Queens $2.00; from 6 to 50, 55 cts. each. Bees by the pound, $1.00. Nuclei, per frame, $1.25. Safe arrival and satisfaction guaranteed. C. B. Bankston,
2Atf Buffalo, Leon Co., Texas.

FOR SALE—North Carolina bred Italian Queens, bred up for business; none better for honey gathering. Good recommendations coming in almost every day. I have Root's, Moore's, Davis', Quirin's, and Laws' strains, and choice Imported Breeders to get my fine honey-gathering strain from. I breed all Queens in full 2-story colonies running over with bees at all times. I keep nothing but the very best Red Clover Italians and the Golden in my yards. Try them and see for yourself. Untested, 75c; doz., $7; Tested, $1.25; Select Tested, $1.50; extra Select Tested, $2; Select Breeders, $3; extra Select, $5. H. B. Murray, Liberty, N. C.

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6A1t Edwin Bevins, Leon, Iowa.

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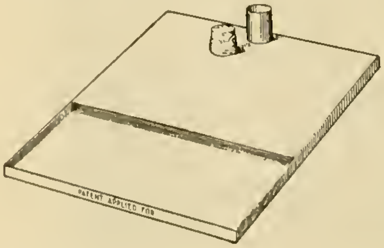
11Atf M. V. Facey, Preston, Minn.

American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address this office.

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and ¼ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.



In case of foul brood you can feed medicated syrup and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.

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3. It reaches where the bees can get at the feed even in cool weather.
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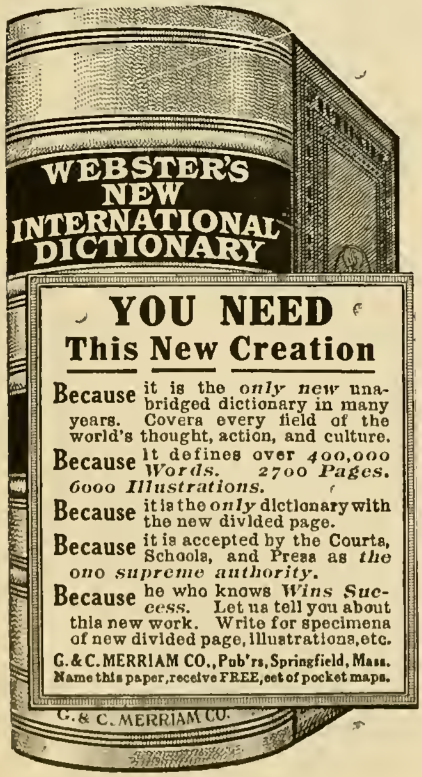

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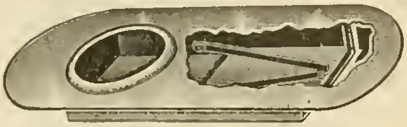

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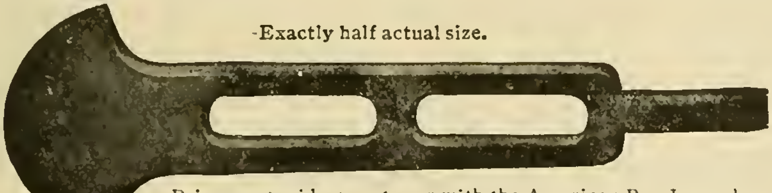

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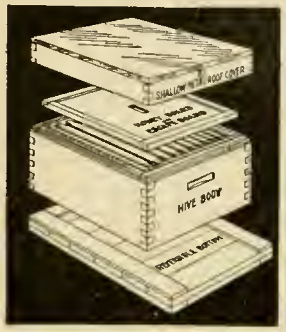

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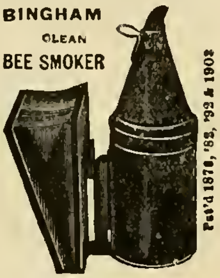

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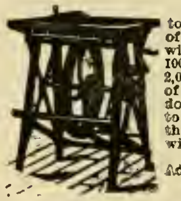
BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

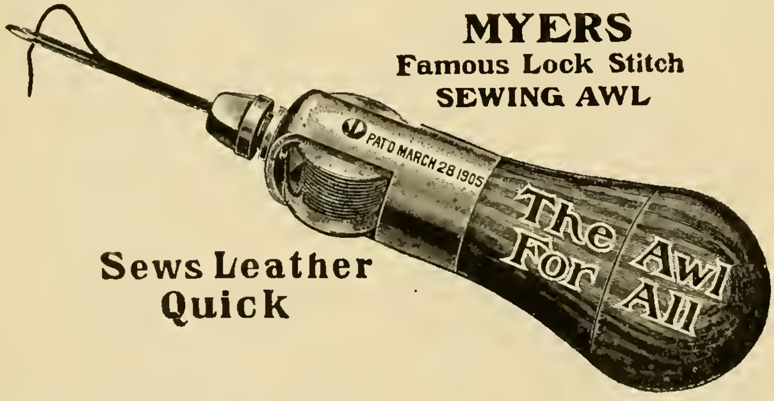
Please mention Am. Bee Journal when writing

Myers Famous Lockstitch Sewing Awl

is designed particularly for farmers' use, but it will be found a time-saver and money-saver in nearly every household. It is not a novelty, but a practical hand-sewing machine for repairing shoes, harness, belts, carpets, rugs, tents, awnings, canvas of all kinds, gloves, mittens, saddles, etc.; you can also tie comforts. The Awl proper is grooved to contain the thread or waxed end, and the point being diamond shape will go through the thickest of leather, green or dry, any thickness.

The "Myers Awl" can be used with either straight or curved needle, both of which come with the outfit, and veterinarians will find it indispensable for sewing up wire cuts in stock. The "Myers Lock-Stitch Sewing Awl" is a necessity for the people; can be carried in pocket or tool chest; nothing to lose, always ready to mend a rip or tear. Better than rivets because it is portable. Can be carried in mower or harvester tool-box, threshing kit, or anywhere. If you save one trip to town for mending, you are money ahead. Every farmer needs one, every man who teams needs one. It is the most practical hand-sewing machine for actual use ever devised. Put up with straight and curved needles, waxed thread, illustrated book of directions, and everything ready for use.

MYERS
Famous Lock Stitch
SEWING AWL



Sews Leather Quick

Our Special Offers of this Famous Sewing Awl.

We mail the MYERS LOCK-STITCH SEWING AWL for $1.00; or club it with the American Bee Journal for one year—both for only $1.60; or we will mail the AWL *free* as a premium for sending us only *Two New* Subscriptions to the American Bee Journal for one year, with $2.00. Surely here is an article that will be very useful in every home. Address all orders to—

American Bee Journal, Hamilton, Illinois.

If YOU want them YELLOW try the GENTLE strains of of Swathmore pedigreed GOLDEN QUEENS.
Swathmore, Pa.

Please mention Am. Bee Journal when writing.

EVERY BEE-KEEPER KNOWS

The Worth of A Good Queen

Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

J. W. K. SHAW & CO.,
Loreauville, Iberia Parish, La.

Please mention Am. Bee Journal when writing.

English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

Please mention Am. Bee Journal when writing.

HONEY AND BEESWAX

CHICAGO, May 20.—The trade in honey during the past week has been of a very limited character. A No. 1 to fancy comb is unobtainable, and very little that will pass as No. 1 appears on sale. The prices for that are ranging from 15@16c. Extracted has not been selling in quantity lots, and the prices for it range nominally the same as for some time past, being from 8@9c for the white, and 7@8c for the various kinds of amber. Beeswax has been in fair supply, and brings from 30@32c per lb. according to color and cleanliness. R. A. BURNETT & CO.

CINCINNATI, May 22.—This market is now clean and bare of comb honey, and we are pleased to note this fact, for it gives the consumer an opportunity to refreshen his appetite for the big, fine crop that is sure to come this season. The demand for extracted has slackened somewhat, and we are awaiting the arrival of the new crop. We are selling amber honey in barrels at 6½@7½c a lb., and the finest quality at 8½@10c a lb., according to the quality and quantity purchased. For bright yellow, choice beeswax, we are paying 30c a lb. delivered here, in cash, and 2c a lb. more in trade; for darker grades than the above, we are paying 28@29c. THE FRED W. MUTH CO.

BOSTON, May 20.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c. BLAKE,-LEE CO.

CINCINNATI, May 20.—The market on comb honey is about cleaned up, and there is practically no demand. Extracted honey has fallen off considerably, fancy white table honey in 60-pound cans at 10c, light amber in 60-pound cans at 8c. Amber in barrels 6½@7c, according to quality. Beeswax in fair demand at $33 per 100 lbs.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

SAN FRANCISCO, May 20.—Comb honey is 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6½c per lb. Beeswax 28c for nice yellow wax, and 23@26c for dark. I am paying 2c higher for beeswax in trade. The new crop of honey will arrive here by the time the report goes to print. Have brigher prospects for the season than at first reported. J. C. FROHLIGER.

INDIANAPOLIS, May 18.—White comb honey sells at 18c per pound in 10-case lots. Amber grades in slow demand and at lower figures. Best extracted sells at 11@12c per pound in 5-gallon cans. Jobbing houses are well supplied, but producers are not now offering any honey. Beeswax is in good demand, and producers are being paid 31c per pound.
WALTER S. POUDER.

KANSAS CITY, MO., May 20.—No new comb honey on our market, and no old comb in jobbers' hands. Some little extracted which we quote at 8@9c a lb. We quote beeswax at 25@28c per lb.
C. C. CLEMONS PRODUCE CO

DENVER, May 20.—This market is entirely bare of good comb honey. Extracted honey in fair supply at following jobbing figures: White, 9c; light amber, 8c; strained, 6¾@7½c. We pay 26c in cash and 28c in trade for clean, yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

NEW YORK, May 20.—Since our last there has been no material change in the condition of the honey market; we really have nothing new to report. It is rather early as yet for a new crop from the South. It may be a couple of weeks longer before we will receive any. Some little lots of comb honey are still coming in, and find ready sale at former prices. The market on extracted is very quiet, and prices have a downward tendency all along the line. The new crop from the West Indies is now arriving quite freely, and no doubt shipments will increase in quantity as the season progresses. Beeswax steady at from 30@32c per lb., according to quality. HILDRETH & SEGELKEN.

AQUASUN

The flavor of richest apple cider.
A table delicacy that has no equal.
A beverage that refreshes and invigorates.
The strongest health-germs in Nature.

Made from Honey & Water

In any kitchen, at any hour, at a cost of 2 to 4 cents per gallon. Process and right to make it, 25c. Circular Free. 5A12t

C. W. Dayton, Chatsworth, Calif.

Please mention Am. Bee Journal when writing.

FOR SALE

A first-class apiary at a bargain. Reason for selling, death of principal owner. Address. **H. C. ADLER, Victoria, Tex,**

The season has opened up more favorably, after all, than many bee-keepers anticipated, and many find themselves unprepared for the swarming period and honey-flow which is just before them. Extra hives just now may mean almost a double output of honey, and we can get these hives to you at once. We have a large and complete stock of all kinds and combinations, and can fill your order the day it is received.

If you are producing comb honey the Danzenbaker hive will give you most excellent satisfaction. Reports from large users of this hive show that with it a very large percentage of fancy comb honey may be produced; and with a little extra protection it is an excellent wintering hive.

Another comb-honey hive that is very popular this season is the Buckeye double-walled hive. This is the new movable-bottom pattern, and the double-wall feature offers protection, not only in the winter, but at all seasons. This is particularly valuable in the early part of the season when sudden changes of temperature are apt to have disastrous results.

For the production of extracted honey there is no better hive than the regular ten-frame dovetailed pattern. This has been a standard for years, and will admit of a number of changes and combinations to suit local conditions and the season.

We have also, of course, our usual stock of all other supplies, and you can handle your order for any item listed in our catalog with our usual promptness and dispatch. We are better equipped than any other dealer in this section to give special attention to hurry orders, and solicit a trial of our goods and our service.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - - OHIO.

RUSH orders for "Falcon" Beekeepers' Supplies

Quick Price-list For Those who do Not Have a Red Catalog.

Beeway sections.	No. 1 quality.	No. 2 quality.
250	**$1.60**	**$1.40**
500	**2.75**	**2.50**
1000	**5.50**	**5.00**
5000	**23.75**	**21.25**

Plain sections 25c per M less.

Price per lb.	1 lb.	5 lb.	50 lb.
Light Section Foundation	.65c	64c	59c
" Brood "	.58c	57c	52c

Hoffman Brood Frames, 10, 35c; 100, $3.00.

No.14 1-story Dovetailed Hive, cover, body, bottom and frames:

8-frame			10-frame		
1	5	10	1	5	10
$1.50	$7.00	$13.50	$1.60	$7.50	$14.50

Dovetailed supers complete without sections and starters:

	8-frame		10-frame	
No. 2, 4¼x1⅞ "	5	10	5	10
2B 4¼x1½ sections	$2.50	$4.80	$2.75	$5.30.
2C 3 ⅝x5 "				
2F 4x5 "				

Ideal Bee-Veil, 65c; by mail, 75c.
Standard Smoker, 85c; by mail, $1.10.
Dewey Foundation Fastener, $1.25; by mail, $1.50.

Untested queens,	1, $1.00,	6, $5.50
Tested "	1, 1.50,	6, 8.00

Condensed **RUSH ORDER** directions:

Sections and supers—give dimensions of sections; hives and supers—state whether eight or ten frame. Order any article not mentioned, send what you think the price (better a little more money), and we will even up with foundation or sections, or return money. You can rest assured of lowest price and "**Falcon**" guarantee of satisfaction.

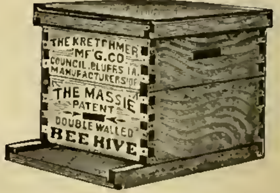
W. T. Falconer Mfg. Company, Falconer, N. Y.

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

H. S. Duby, St. Anne, Ill.

The "Massie" Bee-Hives



We consider these the **Best Up-to-date Hives** made.

Double-Walled, made of full thickness of lumber, same Super capacity as a 10-fr. Dov. hive, and of the same price. **Send for FREE Illustrated Descriptive List.**

BEE-SUPPLIES

We furnish Everything Needed in Practical, Profitable Bee Culture

We manufacture the Dovetailed and Massie Hives with either the

Scalloped Supers Plain Section Supers or Extracting Supers

We have millions of as nice SECTIONS as are to be found in the market, either scalloped or plain, of all the STANDARD sizes. All of our Foundation is made by the

NEW WEED PROCESS

From strictly pure wax. None better.

Our Large Illustrated Catalog is Furnished Free to All Bee-Keepers or Dealers. Write Us for Special Prices. No Trouble to Answer Inquiries.

It describes and illustrates numerous money-saving and money-making devices, tried in our own apiaries before offering them to the public. Write at once for a copy of our Catalog. Our prices are the lowest, the quality of our goods equal to the best; a trial will prove our assertion.

Established 1864.

KRETCHMER MFG. CO., Council Bluffs, Iowa.

AMERICAN BEE JOURNAL

JULY 1912

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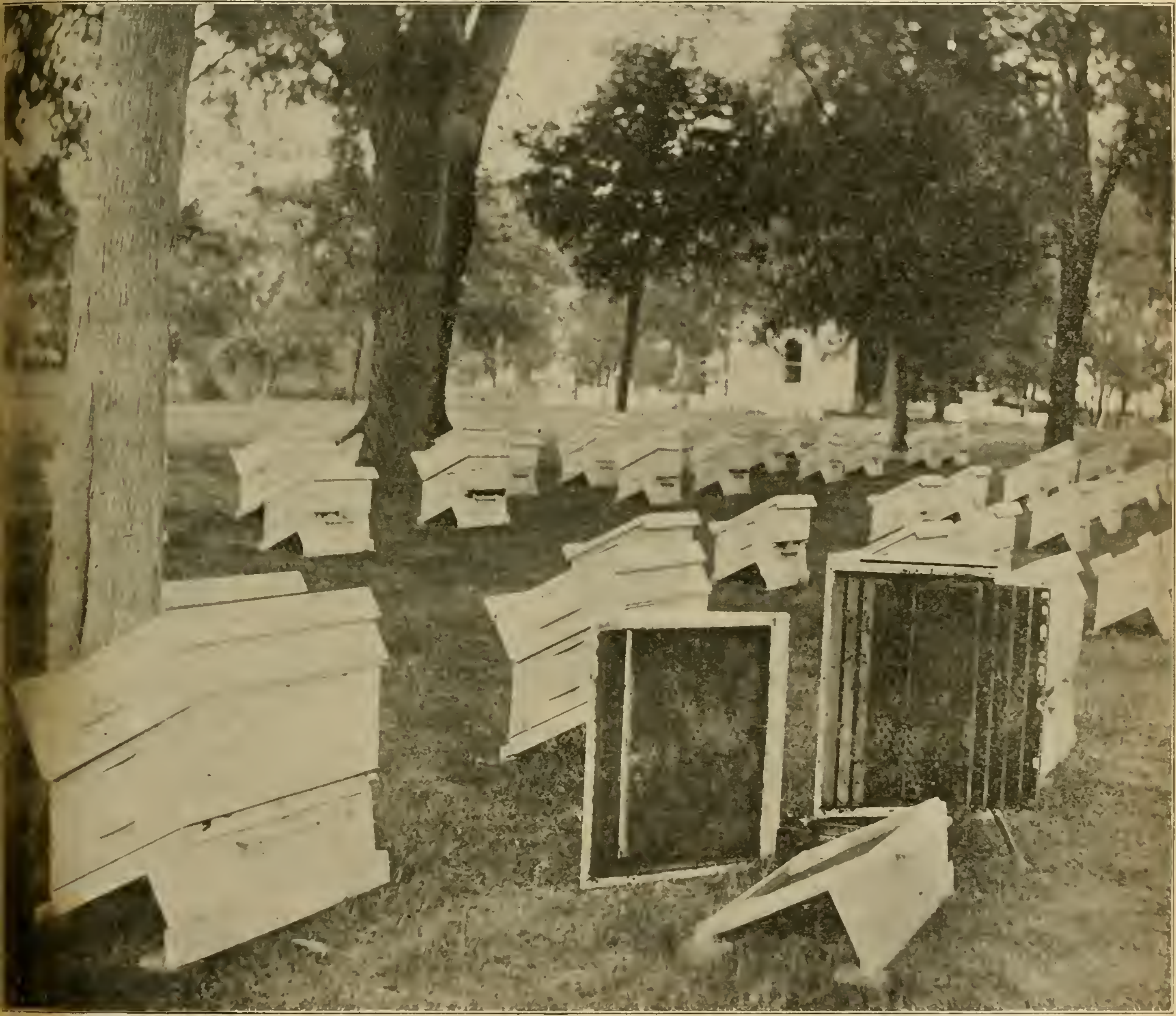

Does the Eye Mislead, or are These Bee-Hives? They are Indeed a New Departure in Hives. Apiary of A. B. Anthony, at Sterling, Illinois

The odd looking hives shown above are the invention of a practical bee-keeper. The Editor was invited to visit his home last August. After having laughed at the odd shape of the hives, he was astounded to see the rapidity and ease with which each hive could be opened, and every part of every comb inspected. The Huber leaf-hive, which is really the ancestor of this invention, cannot possibly stand any comparison. Mr. Anthony, who has taken steps to cover his invention with patents, opened hive after hive without crushing a single bee, and demonstrated that he could hunt up and discover the queen or the queen-cells more quickly than with any other hive the Editor has ever seen. Frames may also be removed with remarkable rapidity.

This is not intended as an advertisement for Mr. Anthony. The Editor has no interest in the invention, and describes it only as one of the greatest novelties of the day. The second picture, on page 200, shows the device for tipping the hives in order to open them. The highest ingenuity is shown in this invention.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
George W. York & Company,
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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14 lines make one inch.
Nothing less than 4 lines accepted.

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3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 25th of the preceding month.

(Organized 1870.)

National Bee-Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

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Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.
Send Dues to the Secretary, E. B. Tyrrell.

BEE-KEEPERS

Look up your stock at once and send me a list of the supplies you need. I have a large stock to draw from to handle your orders for Hives, Sections, Comb Foundation, etc.; standard goods with latest improvements fresh from the factory at factory schedule of prices. I have a general line of **Root's Goods** constantly on hand. My facilities for serving you are unequalled.

Beeswax taken in exchange for supplies or cash.

Italian Bees and Queens

Be sure you have my 1912 Catalog of Bees, Queens and Supplies. 5A3t

EARL M. NICHOLS, Lyonsville, Mass.

FOR SALE---A CAR LOAD OF BEES

Consisting of 300 colonies at $6.00 a colony, spring delivery 1913.

I will accompany the bees and guarantee safe delivery. Purchaser to pay the freight.

MY SEVEN YARDS ARE OVERSTOCKED.

and I do not care to start others, as I have all that I can well attend to. Terms of sale, $300 to accompany copy for contract, and placed on deposit in the Sabinal National Bank of this place against bill of lading; balance payable on arrival of car. Bees are in Standard Dovetailed 10-frame hives, painted, and new bottoms (Danz. style) of ⅞ lumber.

Bees are Italians and Banats crossed, and many of them are pure mated for the production of honey. Could ship if wanted after Sept. 15, this year, at $5.50 a colony. Health certificate furnished.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas.

Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

OUR FREE CATALOG

Will tell you all about our

Best Bee-Keepers' & Poultry Supplies

Sold at lowest living prices. We handle the Best Sections in the World—the August Lotz Sections at Lotz prices. **Three Carloads** of Goods on hand with 2 more coming.

Drop us a card and we can please you.

Catalog Free. **H. S. Duby, St. Anne, Ill.**

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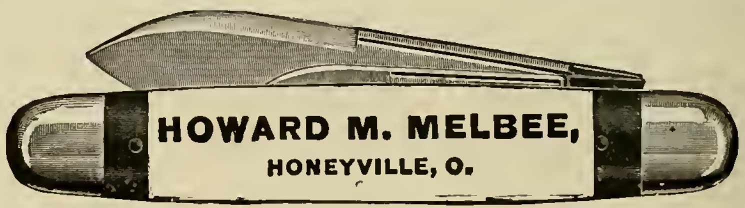
BEE-KEEPER'S NOVELTY POCKET-KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

PERFECTION in Wax Rendering

Has Been Reached By Our Process.

Ship Us Your

OLD COMB AND CAPPINGS.

And Secure Highest Returns.

WRITE FOR PRICES AND FULL INFORMATION.

THE FRED W. MUTH CO.
"The Busy Bee Men"
51 Walnut Street, CINCINNATI, OHIO
Comb and Extracted Honey Wanted.

George W. York
Sandpoint,
Bonner County **Idaho**

I am now located in Northern Idaho, in what is known in the Northwest as **"The Inland Empire."** I believe it is destined to be the great "fruit-basket" of the United States. It is also exceptionally fine for bee-keeping, dairying, poultry, etc. I am told by those who have lived here for years that the climate, take it the year around, is hard to beat. There is practically unlimited territory that is unoccupied. The Clovers (white clover, especially), willow-herb, golden-rod, berries, etc., abound everywhere in this region. Land can be had at all prices, depending upon location, condition of cultivation, etc. I will be glad to help any one to a good location for bees, etc., if requested. I, myself, have no land for sale, but I can put you in touch with reliable people who have it. Soil and drinking water are of the best. No irrigation necessary in this part of Idaho.

A Few Special Offers.

American Bee Journal one year ($1.00) with either "First Lessons in Bee-Keeping" (50c), or Doolittle's "Scientific Queen-Rearing" (50c), for only $1.00; or the American Bee Journal a year with **both** of the books mentioned—all postpaid for only $1.40.

If you prefer, you can have either Gleanings in Bee Culture or the Bee-Keepers' Review for a year instead of the American Bee Journal in the above special offer; or, if you want both books and any **two** of the three bee-papers, send $2.20; or if you want both books and all three bee-papers for one year, send $2.90.

Send for my **free** Circular of other special offers.

White Sweet Clover Seed

I have a quantity of White Sweet Clover Seed in Chicago, Ill., which I will sell at the following low prices so long as it lasts, all orders to be sent to me here at Sandpoint, Idaho:

5 lbs. for 80c; 10 lbs. for $1.50; 25 lbs. for $3.50; 50 lbs. for $6.50; or 100 lbs. for $12.00.

If wanted by freight, add 25c for cartage on your order.

While I make the handling of bee-literature a specialty, I also take subscriptions for general magazines. Write me what you would like in the way of bee-papers, bee-books, etc., and I will be glad to quote you some attractive prices. Address,

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
Sandpoint, Bonner Co., Idaho

Please mention Am. Bee Journal when writing.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co, Kan, July 15. A. W. SWAN.

GEORGE W. YORK & CO:—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22 CHAS. MITCHELL

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W YORK & CO.:—The queen I received of you a few days ago came through O. K. and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50. or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

MARSHFIELD GOODS

BEE-KEEPERS:—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

When You Buy Lewis Beeware You Get

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine bright basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched over by experts. The Lewis head mechanic has 35 years of bee-supply experience; the superintendent of bee-hive department 29 years; the superintendent of sections 28 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed — a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

G. B. LEWIS CO., MANUFACTURERS OF BEEWARE **WATERTOWN, WIS.**

If BEES could TALK

THEY WOULD SAY:

"GIVE US DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

AMERICAN
BEE JOURNAL

Published Monthly at $1.00 a Year, by George W. York & Company, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JULY, 1912

Vol. LII---No. 7

EDITORIAL COMMENTS

Amount of Honey Consumed by a Colony

The reader will find in this number a very interesting article upon this question from the pen of Adrian Getaz. Mr. Getaz shows, as usual, profound study on his subject.

On the cost of wax, however, one of his authorities is hardly to be relied upon. Sylviac is the writer who, after making an experiment on the honey extractor, denounced this implement as impracticable. No further comment is necessary.

Regarding the weight of cappings, the Editor has repeatedly found that it amounts to from 1 to 1½ percent of the total weight of the honey extracted.

The cost of wax to the bees is not only the actual consumption of honey, but also the loss in crop to those bees while they are confined to the hive, building the comb. If we figure it in any other way, we delude ourselves. Of course, for the purpose of ascertaing how much honey is actually consumed, Mr. Getaz' argument is good. But the *exact* cost in honey can be no better determined than the cost in corn for the fat produced in cattle. It evidently varies with circumstances

To All Who Have No Foul Brood

Every now and then a letter comes from some one in a panic because there is some unusual appearance in his hives, and he is afraid foul brood is present. It may be that there is nothing serious whatever, and he might have saved himself the panic if he had only taken the trouble to read up a little on the symptoms of bee-diseases. But he had always felt that he was not interested in foul brood, and in his reading skipped anything on that subject.

In most cases, however, it is likely that fears are justified. Foul brood is so thoroughly scattered all over the land that no matter how secure you may now feel it is only a question of time when it will silently make its appearance in your apiary. It will make no great hurrah upon its arrival, but it will be there. So the more you know about it in advance the better you will be able to meet it. It may be many dollars in your pocket if you can stamp it out while yet it is in only one or two hives rather than to wait until it is scattered through your whole apiary.

If you suspect disease in your brood, do not *send* samples to this office or to Dr. Miller. Send them to Dr. E. F. Phillips, Agricultural Department, Washington, D. C. Dr. Phillips is very much in earnest in doing what may be done toward overcoming the evils of foul brood, and will be glad to help you. If you write to him in advance, he will send you a tin box just right to contain a piece of brood-comb 3x4 inches. Not only that, but he will send you a frank so that postage for sending will cost you nothing. And he will make no charge whatever. Could you ask anything better? Keep a sharp lookout, and act promptly on the first appearance of anything wrong.

Mailing System of the World

The "Outlook" for March 23 contains an article entitled, "On the Trail of the Red Letter," describing the manner of transporting mail from the largest business centers to the most remote country post-offices. The methods of postal transportation are wonderful, and postal agents all over the world are amazingly accurate. Not only are all sorts of articles, from an umbrella to a queen-bee, sent safely from one part of the world to another, but the most abbreviated addresses are sufficient, if clearly written. A letter bearing the three words: Dadant, Hamilton, America, and mailed in Japan, reached its destination at Hamilton, Ill., in spite of the fact that there are 29 Hamilton post-offices in the United States alone. The post-marks showed that this missive was first sent to Hamilton, Ont., which is the largest Hamilton in America. From there it was forwarded, on trial, to Hamilton, Ohio. The postal authorities at the latter place being supplied with our address, the letter came on to Illinois without further detour.

But the postal service of America will not equal that of other countries until we get a parcel-post equal to theirs. Thus far, the Express Companies, by lobbying and misrepresentations, have succeeded in foiling the desires of the great majority, and have induced the retail merchants to believe that the establishment of a parcel-post would be the death of the local retail trade. The experience of other countries proves this to be entirely false. Is it not a positive shame that a half pound of merchandise samples may be sent from your post-office to the end of the world, to Japan or Formosa, or to the Fiji Islands for 4 cents, while it costs just twice as much to mail it to your next post-office? Very few people are aware of this. It is to be explained only by the desire of enriching the Express Companies at the expense of the people. It is a success. How much longer will you stand it, you American voters?

The Dickel Theory and Parthenogenesis

The first volume of the American Bee Journal was published in 1861. It has been claimed that no single volume of any bee-paper was ever of more value than that, because it contained a full discussion of the Dzierzon theory. Throughout 10 months of the year ran the translation of a series of articles written by the Baron of Berlepsch, laying down 13 propositions which are now accepted by the readers of this paper. But when they were first published in the German Bienenzeitung, in the middle of the 19th century, some of the views advanced by Dzierzon were bitterly opposed.

Chief among the views considered more or less novel at that time were the following: In order to be able to lay *both* male and female eggs the queen must be fecundated by the drone; the fecundation of the queen is always effected outside of the hive, in the open air, and while on the wing; all eggs in the ovary of the queen develop as males unless impregnated while passing the mouth of the spermatheca; if a queen remains unfecundated she ordinarily does not lay eggs, but if she does, the eggs produce only drones.

Parthenogenesis, or the production of a new individual from a virgin without the intervention of a male, was the chief bone of contention. "The controversy was a very animated one," says the American Bee Journal, Vol. I, page 5, "nor was opposition silenced till, by the introduction of the Italian bee, the means of conclusively determining the chief points at issue were furnished."

Fortunately the American readers of bee-papers have been saved the many pages of discussion, and they are to be congratulated also on escaping the pages upon pages of discussion that have occurred in German bee-papers within the last few years concerning a theory put forth by Ferdinand Dickel. Contrary to the Dzierzon theory, Mr. Dickel claims that *all* the eggs laid by a queen are impregnated, an egg laid in a drone-cell being precisely the same as an egg laid in a worker-cell, the sex of the egg being determined after it is laid, by the manipulations of the nurse-bees.

In this connection it may not be uninteresting to recall that in that same first volume of the American Bee Journal E. Kirby, of Henrietta, N. Y., advanced the theory that "the workers in their flight with the drones alight on the drones' backs and cause them to give off their semen, which the workers lick up and carry to their appropriate cells in their hives, for the purpose of propagating the young queens." Nine different articles were occupied with the discussion of this theory, one of the participants being no less than the Rev. L. L. Langstroth.

Whether the Dickel theory shall fade away as utterly as has the Kirby theory remains to be seen.

Dickel is not the only man who has tried to upset the Dzierzon theory. Some 20 years ago, in Italy, Canon Ulivi also brought forward a theory, on the same subject. It is now buried.

One of our correspondents from California brings us as an argument, the statement made by Mr. A. C. Miller, that "the drones of the yellow races are in coloring quite variable." This he gives as evidence that the drones of a pure queen impurely mated are tainted by the mating. But the fact is that the drones of the yellow races are variable in their own country, where there are no other breeds.

Very unreasonable things have been advanced to support the Dickel theory. In L'Apiculteur, for February, a writer makes an alleged quotation from L'Académie des Sciences, testifying that the sex of a child may be changed before birth by treating the mother, at the proper time, with "adrenalin."

We propose to abstain from any discussion of the Dickel theory, at least until the Germans come to some sort of understanding among themselves as to what there may be in it. Personally, we consider the Dzierzon theory as no longer a theory, but a positively proven fact.

Bee-Keeeping in the State Universities

We call our readers' attention to an article upon the above subject, in this number, from the pen of E. J. Baxter. Mr. Baxter is not only a large honey-producer, he is also a fruit-grower of note in the horticultural section of which Nauvoo is the active center. Mr. Baxter is first vice-president of the Illinois State Bee-Keepers' Association, and was one of the most influential supporters of the foul brood bill voted by the Legislature at its last session.

The time is ripe for State action in teaching apiculture, and those of our readers who are interested in the progress of our State institutions are urged to make efforts in this direction.

The Kansas Agricultural College is conducting experiments upon the influence of insects on fruit fertilization. Although the experiments are just begun, it is already estimated that the honey-bee constitutes between 80 and 90 percent of all the insects that help in the fertilization of the apple. Dr. Headlee believes that the Kansas crop of apples may be greatly increased if it is proven that the honey-bees help the setting of the apples. We have no doubt that he will find this to be the case. The above is a condensed quotation from the Kansas Industrialist of June 1st.

Exchanging Supers from One Colony to Another

The novice may wish to try the excellent plan suggested by Mr. Doolittle, in the present number, for securing a larger number of well-finished sections. Let him bear in mind that during a honey-flow he does not need to remove the bees from a super when making these exchanges, for at such times there is no disagreement; no fighting. The only thing to guard against is the accidental removal of a queen, if she should have been frightened away from the brood combs into the supers. This accident is impossible when queen-excluders are used.

The Editor has often used this method of "equalizing" the supers some days before the close of the crop, and recommends it highly, even in the production of extracted honey.

Ill-Jointed Hives and Robbing

Old disjointed hives give the apiarist much trouble, when any robbing occurs at the end of the honey crop. A quick way to repair them temporarily is to plaster the cracks with a little clay mixed with water. It effectively closes up the unwelcome openings. Our European brothers use a mixture of cow-dung, clay and ashes, which makes a cheap and lasting cement.

Spacing the Frames

The practical apiarist knows that brood-frames can not be spaced at less than 1⅜ nor more than 1½ inches from center to center. But the beginner often hesitates, and sometimes hangs the frames too far apart or too close together. Loose hanging frames should be fastened down in their place until the swarm has been hived and moved to its permanent stand.

Dr. Miller's Answers

It is the desire of the American Bee Journal to make this department as useful as possible to its readers. All questions pertaining to bee-culture are welcomed, and Dr. Miller will answer them to the best of his ability. There is, however, one limitation. Elementary matters which are taught in every good book on bee-keeping are not legitimate subjects for this department. It is the supposition that every reader has such a book. If he has not, he is standing greatly in his own light not to get one immediately. Now and then, however, some one may feel like saying, "I have no bee-book, and I don't want to get one, and I want all my questions answered the same as others." And what are some of the questions he will want answered—that every bee-keeper must know about, sooner or later? Here are some of them: "Does the old queen or the young one go with the first swarm?" "How long is it from the time the egg is laid until the worker comes out of the cell?" "Does the queen lay drone eggs as well as worker eggs?" "How long does a queen live?"

Now suppose our beginner has all these questions answered for him among Dr. Miller's answers. Each month new subscribers are coming in, and among them those who will want the same questions answered. By the time they are answered over and over again, for a year or so, Mr. Beginner will think there should be some better way than to have space occupied with things that are entirely familiar to all except new subscribers. To meet exactly this need is the office of the text-book on bee-keeping. And it meets the need better than it could be met by a department in a bee-paper answering questions only as they are sent in. It answers not only the questions the beginner would send in, but many others that he might not think to send in, but about which he ought to know.

It might occur to some one that the publishers of this journal are interested in the publication of a bee-book, and are trying to force the beginner to buy it. It is true that they are interested in "Langstroth on the Honey-Bee," and believe it a good book. Yet there are others; and, of course, each one is entirely at liberty to get what book he chooses. The possession of *some good book* is absolutely essential to any one who would make a success at bee-keeping. With even a single colony, the price of a book may be saved in a year by its teachings. So it is in the beginner's own interest that he is urged to get such a book.

But after you have a book, or even several books—and there is advantage in having more than one, as also in having more than one bee-paper—there will still be questions constantly arising that are hardly answered in a book, however good the book may be. To meet this need is the province of "Dr.

Miller's Answers." Perhaps in the book there is some point about which further explanation is needed. Dr. Miller will be glad to help in such a case. Something special may arise in your experience that the book does not touch upon. Ask about it.

Occasionally some one writes that he has been watching to find among the answers something in which he is interested, and appears to have a grievance that he has found nothing. Has it never occurred to him that if all would wait for questions asked by others there would be no questions, and consequently no answers? Don't wait for some one else to ask your question, ask it yourself. Proper questions are desired and welcomed.

If you will take notice of the large amount of matter contained in one number, you will realize that there ought to be room for many subjects, and that a magazine which goes to so many different localities and countries must necessarily contain great variety. Some things which may not be of interest to you will interest others, and there is not a magazine in the world which will give only such information as you may want for your individual self.

Sometimes a question is sent in, say the last of June, with the injunction, "Be sure to get this in the July number," when it may be that at the very moment that injunction is being written the paper is already on the press, with no possibility of the question being answered until a month later. And it may be that the question is one that might just as well have been asked a month or two earlier, only it did not seem so pressing then, and so was put off. It should be remembered that it takes time for a letter to travel in the mail, and then a much longer time for the answer to be put into print. In some cases it may make a difference of a month as to whether a question is sent direct to Dr. Miller or to this office. In all cases it is a little better to send direct to him, although questions will be cheerfully forwarded to him from this office.

Questions from the ladies should be sent to Miss Emma Wilson, Marengo, Ill., such questions always having the right of way, and getting the best attention that can be given both by Miss Wilson and Dr. Miller.

It hardly need be said to any thoughtful person that he should not expect Dr. Miller to make an exception in his case and send an answer by mail. If that should be done in one case it should be done in all cases, and there would be no department of questions and answers. All should be treated alike.

Congratulations Received

The Editor acknowledges the many complimentary letters received from friends in all parts of the world concerning his new position. They are appreciated, indeed. We would be proud to publish some of them, especially those from our most esteemed friend, Prof. A. J. Cook, now Commissioner of Horticulture in California. But it will be better to try to deserve half of the good words spoken so kindly.

A Meeting of Bee-Men in Eastern Illinois

The Editor was present at a meeting hurriedly called at Watseka, Ill., on June 8, for a field demonstration. Inspector Kildow, his deputy I. E. Pyles, Jesse H. Roberts and H. S. Duby, officers of the Eastern Illinois Bee-Keepers' Association, and several others were present. A report of this meeting, and of another to be held a little later at St. Anne, Ill., will be published in the journal. The bees have suffered greatly in eastern Illinois, and there is very little white clover.

Cause of European Foul Brood

We mentioned last month Circular No. 157, issued by United States Department of Agriculture, written by G. F. White, M.D., Ph.D. With praiseworthy persistence Dr. White has continued his effort for several years to trace to his lair the miscreant that causes European foul brood, and at last his efforts have been rewarded. One bacterium after another has been named by different investigators as perhaps the right one, but with no great certainty. As early as 1907, in the investigations of Dr. White, a certain micro-organism came under suspicion, which he referred to as Bacillus Y. He now feels warranted in announcing that this is the real cause of European foul brood, and has named it *Bacillus pluton*. Those who are interested in learning the successive steps by which Dr. White reached his conclusion will do well to send 5 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C., to obtain a copy of the circular.

The average reader will not be so much interested in this scientific phase of the subject as he will in the instruction as to diagnosis. When healthy larvæ of such size as to fill quite full the bottom of the cell while still coiled up, are slightly magnified, a peristalsis like motion of their bodies is easily seen, but if the larvæ are sick this motion may frequently be seen by the naked eye. If, instead of the glistening white or bluish-white appearance of healthy larvæ, one observes some that are more transparent, or that possess a very slight yellowish tint, frequently such larvæ are diseased. Some other means of diagnosis that are given, to be used while the larvæ are still alive, will hardly be applied by the rank and file of bee-keepers.

If we may depend upon Dr. White's researches, we now know that *Bacillus alvei*, so long considered the cause of foul brood, is not a cause of disease in bees at all, although often found in large numbers in diseased brood; also that American foul brood is caused by *Bacillus larvæ*, and that European foul brood is caused by *Bacillus pluton*, although as to this latter Dr. White says: "This organism is an unusual one, and the classification has not yet been definitely determined. The generic name 'Bacillus,' therefore, may, and probably will, be changed later."

Is Past 80 Years Old

Mr. Edouard Bertrand, of Nyon, Switzerland, former editor of the Revue Internationale D'Apiculture, was 80 years old on May 16th.

We wish him many more happy anniversaries.

MISCELLANEOUS NEWS ITEMS

Sweet-Clover Bulletin.—The United States Department of Agriculture has issued a valuable bulletin entitled, "Sweet Clover," written by J. M. Westgate, Agronomist, and H. N. Vinall, Assistant Agrostologist. The views of bee-keepers as to the value of sweet clover as a forage plant are likely to be somewhat partial, hence have little weight with neighboring farmers. Here is a document that from its source should be considered rigidly impartial, written in the interest of farmers, and so should have weight with them.

A few extracts will be of interest, and here follow:

> It is of so much value, when rightly utilized, that its extension where it will not prove a menace should be encouraged by every legitimate means. Its value as a honey-plant has long been recognized, but its efficiency in increasing the fertility of run-down soils is less widely known. Its utilization as a pasture, hay, and soiling crop is even yet practiced only locally throughout this country, but the extent of such utilization is steadily increasing. The fact that the bacteria on its' roots are capable of inoculating alfalfa makes it a valuable crop to occupy the land immediately before seeding alfalfa. The sweet clover not only inoculates the soil, but the large roots do much toward breaking up and aerating the subsoil, a condition which is very favorable to the growth of the alfalfa plants.
>
> It makes its best growth on rich, well-limed ground, but will make satisfactory growth on very poor lime-stone soils. It succeeds on newly-exposed clay soils that presumably lack lime, but does not spread rapidly in clay soils outside of the limestone sections. When wanted for hay it will usually pay to seed it on fairly good soil, but for pasture the poorer fields of the farm can be made to yield returns that will justify the utilization of this crop upon them. Its value comes not only from the pasture obtained, but also from the improvement resulting to such poor soils, especially if they be of limestone origin. After a few years in sweet clover, during which considerable pasture can be utilized, the ground will be brought into much better conditions for cultivated crops than it was before the sweet clover was established.

Sweet clover requires a thoroughly compact seed-bed with just enough loose soil on top to cover the seed. Failures on cultivated soil have probably generally been due to the fact that the ground was not solid enough. Look at the successes on the hard roadside.

It usually requires 20 to 30 pounds of hulled seed per acre, 5 pounds more if the seed is unhulled. It may be sown as soon as the ground is dry enough in the spring, but in the latitude of Iowa best results are obtained by sowing the first week in May. It is more successful when the seed is sown alone.

On account of its bitter taste, animals are slower about learning to eat sweet clover than they are about eating other legumes. But the fact that in at least half of the States in the Union, stock have become accustomed to eat this plant indicates that the natural distaste which stock at first show can be successfully overcome. They learn to eat the dried hay more readily than the green plant, and they are likely to take kindly to the tender shoots in the spring when other growth is scarce.

Fresh sweet clover contains 20 percent less of protein than fresh alfalfa, and 11.4 percent less than fresh red clover. Sweet-clover hay contains 7 percent less protein than alfalfa hay, and nearly 10 percent *more* than red-clover hay.

The following table of comparative values per ton of different feeds is interesting:

Sweet-clover hay	$18.49
Alfalfa hay	20.16
Red-clover hay	14.12
Timothy hay	9.80
Cowpea hay	19.76
Wheat bran	22.80
Shelled corn	20 16

From certain sections of western Iowa, steers have been turned off fat from sweet-clover pasture, and have brought $1 per hundredweight premium over the ordinary grasspastured stock marketed at Chicago from the same locality.

The dairy farmers around Ferron, Utah, are practically unanimous in the opinion that sweet-clover hay will produce as much or more milk than alfalfa, and it is also very highly prized for feeding horses during the winter.

You can have a copy of this bulletin sent free to you if you apply to your Congressman or the Secretary of Agriculture, Washington, D. C., for Farmers' Bulletin 485.

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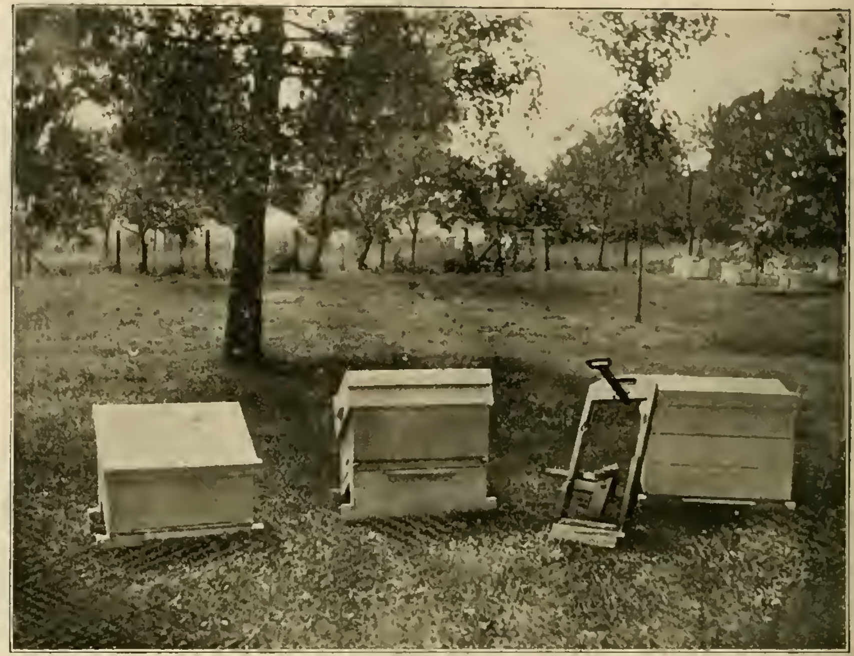
Black Bees in Switzerland.—E. P., in the "Bulletin D'Apiculture," makes the statement that the Italian bees have never given him the satisfaction which he secured from his black or common bees. He ascribes their failure to the altitude, 4600 feet. This may be the explanation of the fact that nowhere in Switzerland have the Italians proven as satisfactory as they have in America. Of course, we have bee-culture in Colorado at the same altitude, but it is in a much warmer and drier climate than that of Switzerland. The two countries can not be compared as to conditions.

◆

Stretching the Limit. — A grocery house had purchased 10 barrels of glucose. As an experiment they fitted up a top-floor as a honey factory. First they had the floor concreted, then they poured in the glucose, and on the top of it floated a number of very thin boards pierced with holes like a colander. Several hundred bees were then turned loose in the room. They alighted on the boards, and their weight was sufficient to bring up the glucose through the holes in the boards. Hives had been prepared around the room, and when the bees were surfeitd they went into the hives and stored the honey. It was "pure honey," and, according to the salesman, was sold as such.—*Financial Review.*



Anthony's Remarkable Hive-Lifter.—(See front page.)

What next?

◆

Carniolan Bees in Finland.—Mr. Mickwitz, of Finland, who spent several years in the United States studying bee-keeping, and was for about 3 months in our apiaries, sends us the following letter:

> I leave Finland on June 1st, for the Continent, to bring home 150 swarms. Most of them are ordered by customers. I expect to build up some 50 colonies this summer, but do not expect any results this season.
>
> I send kindest regards and congratulations to the new Editor, and wish you all kinds of success. PAUL MICKWITZ.
>
> Helsingfors, Finland, May 21.

◆

Solar Eclipse and Bees—Analysis of Honey.—The May number of "L'Apiculture Nouvelle" contains six reports of the influence of the solar eclipse of April 17th on the worker-bees. This eclipse was central in France at 12:8 noon. The bees acted as if the sun was setting, and in most cases precipitately returned home. We noticed the same behavior in a solar eclipse in this country, years ago. Not only the bees, but the chickens and the birds concluded that night had come and hurriedly went to roost.

In the same number, Mr. Alin Caillas, the author of an excellent little treatise entitled, "Les trésors d'une goutte de miel" (The treasures in a drop of honey), gives the result of analysis of honey from different soils, and shows, by the greater or less proportion of iron and phosphoric acid contained therein, the differences in quality which soils of different grades may produce.

◆

Death of B. T. Davenport.—We have just learned of the death of Mr. B. T. Davenport, of Berlin, Wis., which occurred on Friday, March 29. Mr. Davenport had been a bee-keeper for 40 years, operating from 75 to 200 colonies of bees, and was well known to the more prominent bee-keepers. He had been a subscriber to the American Bee Journal for 25 years. Mr. Davenport was 60 years old at the time of his death. His bees will be managed and operated by his son, who has just finished high school.

◆

European Laws on Foul Brood.—Some French apiarian associations, among which we will mention the "Société Hautmarnaise d'apiculture," have passed resolutions asking the Government to "assimilate foul brood to the contagious diseases of domestic animals, and to apply to this disease the provisions of the law of 1881, on sanitary police."—*Les abeilles et les fruits.*

◆

A Million Dollars for a Wife.—An amusing incident occurred at the banquet of the California State Bee-Keepers' Association. A bee-keeper from Utah, when called upon for a toast, said in part: "Do not think, because I am from Utah, that I have a plurality of wives. I have one, and I would not take a million dollars for her, and I would not give 15 cents for another."

Later a prominent bachelor bee-man, who had been "joshed" a great deal about his position, was called upon to answer to the toast. He opened his remarks by saying: "If you will reverse the statement of Mr. Gill it will apply

MR. E. J. BAXTER, OF NAUVOO, ILL.—(See page 210.

to me. I have no wife, but would give——" the rest was drowned in a roar of laughter.

The chairman of the publication committee promised to take the matter up and do his best to remedy existing conditions.—*Exchange.*

◆

Missouri State Association va. the National.—We have received the following from Mr. J. W. Rouse, President of the Missouri State Bee-Keepers' Association:

> We notice in the American Bee Journal for May, page 135, the action of the California bee-keepers in regard to affiliation with the National. That is about the condition with Missouri bee-keepers.
>
> Since the establishment of the new order of things, the bee-keepers of Missouri hardly know where they are, and what is best to do regarding the National.
>
> The writer, as well as some others in our State, had paid up for a year or more ahead, but the Secretary of the National has returned to our Secretary what had been sent him from our State, asking us to join the National in a body. Our State Secretary, Mr. J. F. Diemer, of Liberty, has written me several letters asking for instructions. At our last meeting in September, in Kansas City, it was our intention to continue with the National. Since the affiliation rules have come into effect, it has been suggested to call a meeting of our State association to consider the matter, but only a small number would attend a meeting called at this time of the year.
>
> From first to last, we have secured about 300 bee-keepers as members of our State association, but there is not a third that keep up their membership.
>
> I fear that the higher dues will keep many from affiliating. I should think it much better to have 300 members at $1 than one-third or less at $2. One dollar is a popular amount for membership, if more many will keep out even if it were only $1.25 or $1.10. I think also that it was a mistake to require a membership of at least 25 to secure affiliation.
>
> In order to perpetuate our State association, it may be necessary to have two rates, one at 50 cents for membership in our State and one at the higher rate for affiliation.
>
> Some are not sure of the advantages of belonging to both associations, whether we are to have any help in protecting our rights as formerly; few have much honey to dispose of, and think the National would not help them in that. There will be no action until we can get another meeting; not before fall.
>
> So far as the writer knows, the former Manager of the National gave splendid satisfaction, and we are at a loss to know why he was not given a try out in the new order of things. This is not casting any reflection upon the present officers, as they all have a first-class reputations.
>
> We would like to hear from others in Missouri with suggestions. J. W ROUSE,
> *Pres. Missouri State Bee-Keepers' Association.*
> Mexico, Mo., May 17.

We hope the Missouri State bee-keepers will see their way clear to join the National. We will be glad to have this matter discussed by them in a brief and practical manner.

◆

Something About Flowers.—Prof. John H. Lovell has an interesting article in Gleanings in Bee Culture concerning the colors of the North American flowers, in which he says:

> Some years ago I began an inquiry as to how many flowers there are of each color in the flora of North America. In northeastern America, north of Tennessee and east of the Rocky Mountains, there have been described 4020 species of flowering plants, or angiosperms. Partly by direct examination and partly by reference to various systematic works I have tabulated the entire number according to their predominant colors—a labor which, I need hardly say, extended over several years. I find that in this area there are 1244 green, 956 white, 801 yellow, 260 red, 434 purple, and 325 blue flowers.
>
> The green, white, and yellow flowers number 3001, or three-fourths of the entire number; while the red, purple, and blue amount to only 1010. Though there are many exceptions, the first group usually have regular or wheel-shaped or cup-shaped flowers with the nectar easily accessible, and are visited by all flower-loving insects a miscellaneous company of beetles, flies, butter flies, wasps, and bees.

The probability is that very few bee-keepers would make anything like a fair guess as to the proportion of flowers of different colors. Like enough quite a number would say off-hand that there were no green flowers, unless attention were called to the grasses, and even then probably very few would make the estimate that nearly a third of all the flowers are green. Moreover, if a dozen different persons were asked to give a guess as to how many species of flowers in each hundred are green, white, etc., the dozen guesses would vary widely. In order to make a test of the matter, two experienced flower-lovers were separately asked to make a guess as to the percent of each color, with the following result:

	1st guess	2d guess	Lovell's figures
Green	4	15	30.9
White	5	25	23.8
Yellow	20	8	19.9
Red	30	40	6.4
Purple	5	10	10.9
Blue	8	10	8.

One of the Apiaries of Abbé Warré, Curate of Martainneville, France.

One thing likely to lead to error in estimating, is that attention will be fixed upon the total number of flowers, instead of the number of kinds. Millions of red-clover blossoms will be thought of, whereas red clover only counts one among 4020. Because there are nearly 4 times as many white species as red, it by no means follows that the total number of white flowers may exceed the red.

Prof. Lovell says that "among the wind-pollinated plants are the grasses, sedges, and rushes; many homely weeds, like the pigweeds, sorrels, nettles and ragweeds, as well as many deciduous bushes and trees, as the alders, poplars, elms, beeches and birches." He estimates that these, including a few pollinated by water, number 1046. Deducting this number from 4020, leaves 2974 species depending upon insects of various kinds.

◆

Malta, an island in the Mediterranean sea, was "Melita" originally. That was its Latin name. "Mel" is "honey" in Latin. Was the one derived from the other?

◆

An Industrious Nation is like the honey-bees; we take away their wax and their honey, and the next moment they work to produce more.—*Voltaire.*

◆

A Novel Display.—The photograph given represents Mr J. C. Frank, of Dodge City, Kans., and a corner of his apiary. The capital letters A R Y, shown in the photo, are the last letters of the word "apiary," used by him to make his bees build, out of comb honey, the sign shown on the front page of the American Bee Journal for March, in his apiary display. Mr. Frank is an active worker, and makes beautiful Fair displays of both bees and honey. Success to such men, for they help to advertise honey among consumers.

MR. J. C. FRANK AND PART OF HIS APIARY.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

The Value of Poplar Trees as Honey-Producers

I am just taking renewed interest in bees and honey, and want to ask a few questions:

What is considered to be the honey-production of our old, native poplar trees, and what is the quality of the honey? Can you tell me of any book that tells of the honey-producing qualities of our trees and plants, also any individual I might write to for information on the subject?

Can you give me the address of Prof. A. J. Cook. I have several large, old poplar trees that I have been offered a price, but have been keeping them for my bees. I would be glad to know what others, with more experience, think of it.

Duluth, Ga. (MRS.) H. STRICKLAND.

P. S.—Did you ever hear of bees committing suicide from the poplar tree, or in any other way? H. S.

I do not know of any book that gives very full information as to different honey-plants. In the leading text-books on bee-keeping a list of such plants may be found, but nothing very definite as to the value of each one. In fact, it would be a very difficult thing to say just how much was the honey value of any given plant. In a general way we know something about what are good honey-plants, as, for instance, white clover. But no one can say how much honey can be obtained from an acre of white clover. Even if we knew exactly how much honey was had from a certain acre, that might be much less or much more than from some other acre. Moreover, on precisely the same ground, and apparently the same stand of plants, the yield this year might be quite different from other years.

Now after all this has been said, it may be that some one who has had experience with poplar as a honey-plant, can give us some information that will be of value. In the meantime, subject to correction, it may be no harm to say what is the impression about poplar honey in this region where poplar does not grow. That is, that poplar yields a good quantity of somewhat dark honey of flavor that is approved where it grows, but not liked so well elsewhere.

As to whether it would be to your interest to sell your trees to be cut for the timber, or to preserve them for your bees, much depends upon conditions. It must be taken into account that if cut as timber you have their value once for all; while as honey-yielders their value is continuous. If there are no other poplars within 2 or 3 miles, and no other plants that yield nectar at the same time as poplar, then it is likely that it would not be advisable to sell them. On the other hand, if poplars are reasonably plenty within 2 or 3 miles, or if there are plenty of other honey-plants that yield at the same time as poplar, then it may be to your advantage to sell the trees.

Mr. J. J. Wilder, of Cordele, Ga., is an able bee-keeper who probably undestands well the honey sources of your State.

Prof. A. J. Cook is now California Commissioner of Horticulture, and a letter addressed to Sacramento would reach him.

A bee will not hesitate to sacrifice its life in defense of its home. Anything aside from this in the line of suicide is likely mythical.

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More Trouble With Swarms

It is always a matter of interest to watch the course of an enthusiastic beginner in bee-keeping. The proverb has it that "The course of true love never runs smoothly." The same is true of bee-keeping. And that very fact makes one of its chief charms. To meet difficulties and to overcome them—that's the thing for your true bee-keeper.

Mrs. Spofford was advised, on page 171, to try the Demaree plan of preventing swarming, under the impression that she was working for extracted honey. This was a mistaken impression, and she thought she might succeed by trying the Townsend plan of having a super filled with sections except an extracting comb at each side. Also on one hive she would put a super containing partly-drawn combs in sections. But "The best laid plans of mice and men gang aft agley." Same with women, as witness the following letter:

I am a disgusted bee-woman today. On May 24 I went through all the frames in my 3 hives. In No. 1 I cut out, I think, 9 queen-cells. In Nos. 2 and 3 I couldn't find a queen-cell, but there was brood in both. But in both No. 2 and No. 3 I found scattered about in the bottom of the cells a deposit light in color. There was none in No. 1. In No. 2 I actually found the queen.

Now this is June 2, and out came a swarm from No. 1. I was miserable, and said to myself: It will have to go. I am not prepared to hive it; haven't the strength. Half an hour of disgust and I started to find a box. Result, a box into which I put 2 extracting-frames filled with foundation. The box was placed on top of a step-ladder which was also resting on a box. I stood on a chair.

I shook four fifths of the bees into my improvised hive, and put a sheet of wire-cloth over it. It is now an hour later, and those left in the tree have gone into the box, also. I don't want them, and I am so disgusted not to be able to find some way to discipline them and make them return home to work. I shall improvise a super and put a few sections in it, and let them do what they like; and I shall again go through the hives tomorrow.

Townsend's extracting super, under the sections, did not work this time. What I have in mind to do is to make them join the weakest of the colonies next fall.

(MRS.) CHAS. A. SPOFFORD.
Norfolk, Conn.

Please, Mrs. Spofford, don't be discouraged. If you will allow another proverb: "Faint heart never yet won fair lady," and that other classic: "If at first you don't succeed, try, try again." There is a crumb of comfort in the fact that you can have a colony reach that point of strength to be ready to swarm so early as June 2, when not a fruit-tree was in bloom the middle of May. If you can do that every year, and if you can keep down swarming, you ought to get crops if crops are to be gotten.

You cut out all queen-cells May 24, and it seems in all fairness that those bees ought not to have swarmed so soon as 9 days later. It is to be feared that you have rather a "swarmy" strain of bees. We generally count that once in 10 days is often enough to go through to kill queen-cells. And not often will a swarm issue inside of 10 days so early in the season. Later in the season, and especially if they have been previously thwarted, they may swarm within 5 days, 2 days, or even 1 day after the cutting out of the cells. So you see that cutting out queen-cells can by no means be relied upon to prevent swarming. But it generally delays it, and sometimes prevents it entirely. You may be interested in reading about it in Dr. Miller's "Fifty Years Among the Bees."

That red deposit in the bottom of the cells was likely pollen, and not a matter of significance. Sometimes it happens that one colony will gather a certain kind of honey or pollen while another does not.

You might have done a good deal worse in the management of that swarm. Surely, you did well not to have it go off. You are disgusted that you can not discipline those bees. No doubt they are laughing in their sleeves at the way they have gotten ahead of you, but no doubt they'll have their discipline in good time. Uniting in the fall is all right, but you might have taken a little different course. Next time, set the swarm close by the old hive, and then a week later move the old hive to a new location. That will not be much different from what you have done, but it will prevent after-swarms, and it will throw all the field bees into the swarm on the old stand, and then the swarm ought to do good super work.

You might do another way: Have your queen clipped, and when the swarm issues catch the queen and cage her. Cut out all queen-cells and leave the queen caged in the hive. Ten days later destroy all queen-cells again, and liberate the queen. Generally that will be the end of all swarming, but not always.

Here's another way that will put an end to further swarming: When the swarm issues, kill or remove the old queen and destroy all queen-cells but one, of course leaving the largest and best looking cell. Then you need pay no more attention to that colony except to attend to its supers, and to see that the young queen is laying perhaps 2 weeks later. If not, she has probably been lost on her bridal trip, and a laying queen must be furnished to the colony. You will see that by either of these two ways there will be no increase in the number of colonies.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Montezuma County Bee-Keeping

At the very southwest corner of Colorado, where it joins three other States, Arizona, New Mexico and Utah, lies Montezuma county, the ancient home of the Aztecs. Here are to be found the remains of the homes of the cliff dwellers, the oldest human habitations of the American continent.

A richer soil there is not in Colorado, and when I say it I have in mind all of the best sections of Colorado. Pears, apricots, prunes, peaches, plums, cherries, grapes of every kind, apples so highly colored that a Ben Davis looks like a Jonathan, grow to the highest perfection. Mr. Francis, living in McElmo Canon, had peaches weighing 1¾ pounds each last year. The buyers objected that the peaches were too large. He fattened his hogs by letting them run loose in his orchard, picking up the windfalls.

This county is quite a hog country, as corn grows well, making from 35 to 50 bushels to the acre. Alfalfa, of course, is one of the principal crops, and sugar beets will soon be largely grown, as there is to be a sugar factory in the district. Oats often go 100 bushels to the acre, and wheat has been and is being successfully raised on dry land to the tune of 30 bushels to the acre. The soil is a pinkish red, and is easily worked after the sage-brush and cedars are cleared off. The cedars are found principally in the upper end of the valley, but sage-brush is everywhere. The usual way is to grub the sage-brush out with a grubbing hoe, and it costs from $5 to $10 an acre to do it.

This Montezuma country is well supplied with water, since a tunnel a mile long, with a fall of 60 feet, was made through the hills to let the water from the Dolores river into the valley. The tunnel is 7x9 feet, and carries water sufficient to irrigate 40,000 acres of land. As yet, less than 20,000 acres are under this irrigation system. There will be needed additional reservoirs before abundant crops can be assured through the dry seasons.

This is still a pioneer country, but good roads are the rule, and telephones and free rural deliveries reach every part of the county. The county seat (Cortez) is 11 miles from the railroad—a narrow-guage road at that—and the fare is about 6 cents a mile. The fare to Denver is the same, or nearly the same, as from Denver to Chicago, and it takes as long to go from Cortez to Denver as from Denver to New York. The freight rates are scheduled at about the same ratio. It is doubtful whether the railroad pays at all, as a more expensive line to build and operate would be hard to find.

Montezuma county is destined to be a great fruit district, and as a bee-country it has been good for years. Sweet clover abounds, and alfalfa comes along to help. Sweet clover is considered the honey source here, however. Mrs. Holly, who has the largest apiary in the county, and lives in McElmo Canon, 45 miles from the railroad and 30 miles from Cortez, says that her bees swarm three times each year, most of the swarms going to the hills. Most of her bees are in box-hives, and the supers are put on top. The honey is cut out of the sections and sold in bulk to the Indians and others at from 5 to 10 cents a pound. The sections are used over and over again year after year. There are probably 150 bee-keepers in the county, and not more than a dozen of them have bees in movable-comb hives. There is not another county in the State where bee-keeping, as a whole, is at a lower ebb, and where the chances for success are better. But the lack of cheap transportation is holding this country back. Many can not afford good hives, and there is no dealer in the county who carries a supply of goods in stock.

Bees have been yielding 100 pounds of comb honey to the hive where taken care of, but foul brood has wiped out from 80 to 90 percent of the bees during the last 3 years. When Mrs. A. J. Barber was inspector she kept the disease down. When she died no other inspector was appointed, and conditions have become so bad that strenuous efforts must be made to clean things up. Mr. G. D. Taylor is now inspector, and as he is very much interested in bee-keeping, and is anxious to keep his own bees clean, things will doubtless improve.

At the present time there are about 1500 colonies in the county. (This is a guess, but probably not far from the the figure.) Bees abound in the rocks and cedars, and this will without doubt affect the foul brood situation considerably.

Land is about one-half what it is worth in more accessible parts of Colorado, but with improved transportation the price will rise. The people tell me that it is an easy country to live in, as poultry is easy to raise, garden stuff grows well, and sheep and cattle thrive throughout the winter. There are no severe winter storms such as we had in eastern Colorado the past winter.

Pork is found on every table. Everybody has fruit, but they think nobody wants to eat much of it. You know folks get into a rut. They drink coffee and let the grapes spoil. Now, nothing is more delicious than sweet grape juice. When my appetite does not crave grape juice, give me milk, but a large porportion of the farm folks feed the milk to the chickens, calves, cats, etc., and drink coffee that costs them 30 or 40 cents a pound, and they drink it black. When I drink coffee it is for the milk and sugar I can get into it.

Honey is very generally eaten in Montezuma county, you will find it oftener than corn syrup. It is on the tables at the hotels and restaurants, and the farmers make a point of buying a winter supply from some neighbor, if they have no bees of their own. Here is a county that produces a lot of honey, and the home demand takes it all, or nearly so. A good deal goes to the mining camps of Rico, Telluride and Silverton.

Montezuma county has not a single specialist bee-keeper. Mr. G. D. Taylor has 30 colonies, a bunch of sheep, 30 acres of land, and is raising some alfalfa and potatoes. With the county inspection work he will be busy. Mr. Wilkerson is a farmer neighbor of Mr. Taylor's, and has about 35 colonies, all in good hives. Mr. Frank Taylor has about 45 colonies of bees, and his time is taken up principally with his ranch. Mrs. Taylor plans to take charge of the bees the coming year.

At Mancos, 20 miles from Cortez, the remnants of Mrs. A. J. Barber's apiaries are in the hands of T. W. Wattles. Foul brood has decimated the colonies until there are less than 20 left.

Mr. H. M. Barber lives about 4 miles from Mancos, and has some bees which he desires to increase. Mr. Barber is anxious for effective inspection and cleaning up. I met Mrs. Barber's son, and he said that his mother used to sell 20,000 pounds of honey nearly every year.

This is still a new country and hard to reach, but it is bound to come to the front for it is blessed with boundless latent possibilities.

A need of Montezuma county is for a bee-keepers' institute, where the advantages of the movable-comb hive will be shown. Demonstrations in nailing up hives, frames, supers, putting up sections and startering sections and frames should be included in the program. The prevention of swarming will need explaining, and the grading and packing of honey should be taken up. If interest can be aroused, such a meeting will be held as soon as can be arranged.

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The Montrose Meeting

Montrose county, in Colorado, is a comb-honey county. I do not know of a bee-man who extracts as a business. Delta county, on the north, has on the contrary, quite a number of extracted-honey men. The tendency, however, is strongly toward comb-honey production. Mr. R. W. Ensley, who owns and operates the largest number of colonies in Delta county, is changing from extracted-honey production to comb entirely. Some lesser bee-men are making the change more gradually.

The largest attendance at the Montrose meeting was about 50 on Friday evening, May 10. Six or 7 bee-men came from Delta county, and 3 from the eastern side of the mountains. The others were all from Montrose county. Mr. Frank Rauchfuss was expected to be present and talk on the application of the Colorado Grading Rules, but he did not get there, and we thrashed over the changes that were made in the rules last December.

Mr. S. J. Harris, of Olathe, who owns about 200 colonies, and produces comb honey, spoke on the "how" of producing the article, and when he finished speaking the meeting wakened up, asked questions, and discussed methods with such zeal that three or four were bidding for the recognition of the chairman at every opportunity. The production of comb honey, at times, was lost sight of in discussing wintering, feeding, requeening, etc., but, of course, we have a broad subject in discussing comb-honey production.

A Scene in Colorado.

Our meetings will be long remembered, if they are turned over to those present, and they feel that general discussion is the most valuable part of the convention.

The grading of comb honey, according to the new rules, was about the liveliest subject brought up. The No. 2 grade is the lowest grade recognized. Sections that weigh 10 ounces or more, but are fully capped except the outside row, subject to certain other restrictions that I will not mention here, may be put in this grade; also sections that weigh 12 ounces, with not more than 50 unsealed cells filled with honey. Several members thought that sections weighing 12 ounces, where half of one side was uncapped, but filled with honey, should be admitted to this grade. Others even thought if one whole side was unsealed that it should be No. 2 if the section was heavy. Mr. J. R. Miller stood out for the rules as they now are, while Mr. J. C. Mathews held that the rules would render unmarketable a large amount of salable honey for which the rules should make a place.

I consider the rules as very fair on the whole, and think that sections, even though filled, but half unsealed, are cull honey, and should not be recognized in the grades. This does not, however, prevent their sale as cull stock, and it is probable that some buyers may be glad to get this stock at a price that will equal its worth. It is not best to include such stock in the grades, for we do not want to build our reputation on such honey. The point of Mr. Mathews' argument was that he wanted to find a market for this honey, as he did in the past. I do not see where the new rules will necessarily hinder any in this.

I shall have more to say about the grading rules a little later.

At the evening session the writer read a paper on "Foul Brood Legislation," and Hon. O. C. Skinner followed with some valuable suggestions on how to get desired legislation, what to ask for and what to expect in the way of obstacles. Mr. Skinner is a bee-keeper, owning several hundred colonies, but operating only about 20 at his home place. Mr. Skinner, as a member of the Colorado Legislature, introduced the foul brood bill which successfully passed the legislature. He favors the insertion of a clause prohibiting the keeping of bees in box-hives.

Mr. Robert E. Foster, Bee-Inspector for Montrose county, gave an excellent talk on the treatment of foul brood. He quickly warmed up to his theme, and spoke right out of the heart experience. (For the enlightment of those who go much on family ties, I will now say that Mr. Foster and I have been unable to find any. But we call each other by first names, which is just as good.)

The Banquet.

The Entertainment Committee had need of our presence over at a restaurant at 10:30 p.m., where we talked bees as much as we could. Some good stories were told. One member of the Montrose association told a rich one on his wife. It seems the lady in this case had been told that a queen emitted a delicate aroma upon being crushed, something similar to a broken vial containing attar of roses, as it were. So Mr. So-and-So gave her a young queen one day—when queens were more numerous than needful—and she pinched the young maiden bee's head, raised the quivering body to her nose for the enjoyment of a delightful perfume, the queen inadvertently got too close to the nose in question, and the sting was there firmly and securely deposited. Now, ladies, how would you like to have your husbands tell a story like this on you when you were present?

We can not waste time telling what we had to eat, but we were there over an hour, and the 40 or more who attended left rather reluctantly. At all times when the meetings were not in progress, little groups of bee-men would be seen standing around on the corners, talking "shop."

Saturday morning, filling hives before the honey-flow came in for discussion, and the Alexander plan was winner by a decision of about 10 to nothing. Every one who had followed the plan spoke very highly of it. The loss of bees in Montrose county has been heavy, from 25 to 50 percent, and the filling up of empty hives is a vital question. The difficulty now is to get the hives full enough to use the Alexander method with success.

The morning session, Saturday, was expected to be the last, but an hour and a half was found in the afternoon before train time, and Mr. Paul Hunten, of Somerset, was allowed to tell of his tin section, carton, and Sanitary Honey Package. The bee-men, as a rule, agree that he has an innovation that, when perfected, will revolutionize the methods of production and sale of comb honey.

A better bee-meeting it has not been my pleasure to attend for many a moon. Many such meetings for "Magnanimous Montrose."

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Information on Bee-Culture

Mr. Wilder:—You have been referred to me as one who could give me information on bee-culture. I am deeply interested, and have a few colonies of bees to start with, and I want to increase some, and keep increasing as long as I can keep them in good condition, and make them pay.

Crawfordsville, Ga. W. F. Griffith.

Information on bee-culture is obtained in two different ways, by practice or direct experience with bees, and by theory, purchasing and studying literature on bee-culture. But a combination of both practice and theory, is by far the best. You will learn faster, and better results will follow, even from the very beginning. You already have a start in bees, and the next step should be a study of good literature on the subject. The more of this the better.

If your bees are in modern hives, and you have the necessary conveniences, you should first read up on the manipulation of frames or the handling of bees, at once looking through every colony in your apiary. See that the proper conditions exist, supply their needs, and thus keep them in good shape. Bee-keeping will become as familiar to you as your regular line of business; that is, you will fully understand what to do and how to do it.

But if your bees are in *box-hives* and *log-gums*, you had better post yourself on the "transferring of bees," and get the hives and necessary supplies. When the next honey-flow is on in your locality, transfer by some method described in the books into modern hives. By all means follow instructions as nearly as you can and learn at the other man's expense. Yes, and you might learn something by visiting some progressive and experienced bee-keepers, and seeing how they go about certain work. Then do likewise.

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More Subscribers

Dixie bee-keepers, the number of subscribers for the American Bee Journal within our bounds is far from what it should be for the greatest good. It is the best bee-publication for us when it comes to the practical side of our industry, that of the management of bees for the greatest amount of profit. It has been my greatest source of information in my bee-keeping career.

Urge your neighbors to take it. It will pay them tenfold its cost, and they will never regret the dollar spent for it. If the bee-papers were more universally read, brood diseases would be soon stamped out and the industry would thrive much more.

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Is Bee-Keeping a Desirable Pursuit?

The judge of our Circuit Court turns his son over to us as soon as school is over, with this message: "Take my boy and teach him as much of your business as you can, and pay him something if he is worth anything to you. I had rather he would learn bee-keeping and follow it as an occupation than any other business in the world."

The outside world is awakened to the great possibilities of our industry, and this is not confined to those of the humble callings in life. This means something for the future of our industry.

"My bees have done well, and I am more than pleased with results," is the most common expression from those interested.

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Bitter-weed Honey

Dear Mr. Wilder:—Mr. W. R. Cunningham, on page 150 of the American Bee Journal, refers to bitter-weed honey, and I have that to contend with here. I use the Massie hive with 9 frames 15⅝x7¼ inches. Now, do you think it would be wise, as soon as the bitter-weed begins blooming, to remove the comb-honey supers and put another hive-body on each hive? This would give them ample room the rest of the season, and next spring they would be stronger and do more work in the supers and be less inclined to swarm.

Gadsden, Ala. M. P. Hughes, B.S., M.D.

The Massie hive containing frames the dimensions you give is not large enough for our average location, especially if the queens are very prolific, and it would be a wise thing to add another such brood-chamber and let the bees establish themselves well in the two. This, as you say, would most surely give each a larger force of bees next spring and reduce swarming. There are many bee-keepers troubled not a little with the honey from the bitter-weed. I think if I had it to contend with, that as soon as it began blooming I would remove all comb-honey supers if I ran for comb honey; if not, I would extract the good honey, even from the brood-chamber, and let the bees fill up with the bitter-weed honey for winter and spring stores. Or a lot of increase could be made artificially during its bloom by most any of the methods, as the weather conditions are ideal at that time.

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Quieting the Bees

I have been troubled but little with robbing, but sometimes my home apiary, where I pack the honey, has been in great turmoil from some one leaving a comb of honey exposed, or, perhaps, by the smell of the water in which we washed our hands smeared with honey, etc. Then the bees storm the packing-house and get in in various ways. Those on the outside are a great annoyance, clustering on the wire-gauze of the openings of the building, wherever they think they can effect an entrance.

When I become aware of this condition, I set out a lot of supers containing combs from which the honey has just been extracted. Of course, they take to this at once. What a roar they make and what a tumult!

Every fielder is there, and sometimes it seems that all the bees for miles around are there for their share of the spoil. What a time they have for an hour or so, when they will all disperse apparently disgusted, and resolved not to return for another such fooling.

The bees will not tear down the combs, but clean them up nicely.

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Making Increase Economically

Making increase and not interfering with the honey crop, or having to feed, is a difficult problem. But it can be done in the following manner in localities where we have two or more honey-flows with several weeks between, as is the case in most sections of Dixie:

I remove all surplus honey as quickly as possible after each flow, for it grades better than if removed later. And as I make my last round I prepare to make the increase at all apiaries where I desire it. All colonies that are very strong with considerable honey in the brood-nest are marked, and 2 or 3 of the very strongest are divided into two equal parts as nearly as possible, one part left on the old stand and the other placed on a new one.

On the ninth day after each apiary has been thus divided, I return and remove all the queen-cells the queenless divisions have built except one or two cells to each hive, which are left for their requeening, and place them in cell-protectors. Then with cover, bottom, hive-body and frames containing full sheets of foundation, or ready-built combs, I go to one of the marked hives, remove the supers and lift out the frame on the outside, look it over carefully for the queen and set it in the new hive next to one side, and lift out the next frame in like manner, and so on until 4 frames have been lifted out and set in the new hive. During this operation the bees must not be smoked any more than necessary so that the old bees will be lifted out on the frames. If I find the queen and put her in the new hive, I set it on the new stand; if not, I set the new hive on the old stand and give it a queen-cell and half of the supers and bees. I place the old hive on the new stand with the remaining supers.

In 5 or 6 days I return and examine all divisions, and remove the cell-protectors and insert a comb or so in the center of the brood-nest of the divisions that have queens, if they need more comb. Then 2 weeks later I return and insert more comb in the brood-nest of the divisions which contain the old queens. I remove some sealed brood from the stronger ones and give to the weaker divisions. By this time the new divisions have laying queens. About 2 weeks later I again return and place the remaining empty combs in the brood-nest, and again add sealed brood to the weaker divisions. With only a little honey coming in it may be necessary to equalize stores somewhat. It is then only a week or so before the next honey-flow. As soon as it has begun I return and again give the weaker divisions more sealed brood from the stronger colonies.

About all the honey has been consumed in this great increase, but everything is ideal for the honey harvest, and supers are placed on in sufficient numbers for it. There is no swarming during this flow, and it will not be necessary to disturb the bees any more. The greatest amount of honey possible will be harvested.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Moving a Car of Bees "Nerve Racking"

A few weeks ago the writer had his first experience in moving a carload of bees, and he is now quite ready to agree with all who have been on the job, that it is a "nerve racking" business. The car was loaded at night, and the bees had to stay on the siding until the next day at 3 in the afternoon. The day (May 23) was the only real hot one we have had this year, the mercury going up to nearly 90 degrees, and it was surprising what a heat was generated in that car while standing there. Each colony had a full depth empty super on top of the hive, screened over with wire-netting.

The abundance of ventilation was all that saved the bees. During the day I used about 20 gallons of water on them, and I was thankful for the wet weather we had had the day before. I ran out of water, but was able to replenish my can from the ditches when the train stopped at a station.

From 7 in the evening until 3 in the morning my car was banged around the West Toronto yards by about a dozen different switch engines. At first, I was a bit afraid of results. However, I found that an extra hard jolt did not harm them. so after that I did not worry. Leaving at 3 a.m. we were 12 hours going less than 100 miles. We had 56 cars with but one engine, and often had to wait to let other trains pass. Arriving at our destination at 3 p.m., we found that a telegram sent had gone astray. We had to hustle for some rig to unload the bees. In the whole community there was not a spring wagon. At last a flat hay-rack on a heavy lumber wagon was secured, and the bees were moved on that over a road that I would have been afraid of at any other time even with a good spring wagon.

However, "all is well that ends well," and with all the banging the bees received on the car, not a hive budged an inch, and after the moving over the rocks with a heavy wagon, not a single comb was broken. I was afraid that some brood would die, owing to the hot weather encountered on the moving trip, but no dead brood was in evidence, and there was not a pint of dead bees in the whole outfit when the bees were liberated.

For two nights I had no sleep. The night we unloaded the bees it was was after 12 when we finished the job, and I was so tired that I could not sleep when I got the chance. Yes, moving bees is a "nerve-racking" business, but there is a fascination about it, and at a future date I hope to give more particulars about my trip for the benefit of some other "greenhorn" who may have work of that nature.

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Advantage of Clipping Queens' Wings

Owing to the continued wet weather during the spring, and the fact that I had to move the bees referred to above, as well as spend a week in the East helping my son at the New Dublin yard, for the first time in a long while I found it impossible to get all my queens clipped—not half of them were attended to. I had to rush supers on them before I left, to keep down swarming, and when I got home fruit-bloom was over and the hives could not be opened as no honey was coming in. If we get a flow of honey, and there should be much swarming, certainly I will have a picnic with only about half of the queens clipped. For 3 years past, while all the queens have been clipped, we have had almost no swarming, so it would have made little difference whether they were clipped or not. This year may tell a different story.

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Canada a Large Country

Canada is not likely to ever be part of the United States, certainly it is not at present. Ontario is a province of Canada in the same way that Illinois is a State of the Union. This information is for the benefit of a great number of friends over the line who write me and enclose United States stamps for reply. While I can get the stamps exchanged, yet when I receive the regular stamped envelopes with the parties name and address written on, the envelope and stamp are wasted.

In regard to my address, much mail comes addressed to Mount Joy, Canada. Suppose I sent a letter to Hamilton, U. S., what would happen? Chances are that "Hamilton" is duplicated in several States in the post-office directory, just the same as many post-offices are of the same name in different provinces of Canada. Address letters to Mount Joy, Ontario, Canada.

The Carniolan Bees

Many are praising the qualities of the Carniolan bees, especially those bee-keepers who are situated where they have a very early flow of honey. The common difficulty is in having colonies ready for the flow, especially after a cold, late spring. From my personal experience I have no hesitation in saying that a good strain of Carniolans is the best solution of this problem, as given a big brood-nest and abundance of stores to draw from, weather conditions make little difference with this race of bees. In the early spring, brood will be reared at an enormous rate. One friend in Idaho is afraid that they will swarm too much to be of practical use—this idea gleaned from what others have told him. If you use a single brood-chamber 8-frame Langstroth hive, they will certainly give trouble, but with a brood-nest large enough, and lots of storing room, everything will be lovely. By large enough, I mean not less than 10-frame Jumbo, or if the 10-frame Langstroth is used, two bodies can be allowed until the opening of the main harvest, and then if very strong, as they are apt to be, some of the brood should be taken away from the lower story, and foundation or empty combs given before the queen is restricted to the one set of combs.

No Time to "Boil it Down"

Friend Tyrrell gives advice in the June Bee-Keepers' Review as to how correspondents should "boil down" their contributions for the journals. First write the full account, giving all details, etc., then go over with a pencil and mark out all not really necessary, and rewrite the story much simplified and much shorter than the original. It sounds all right friend Tyrrell, but that is absolutely impossible for this scribler, because sometimes I am *too busy*, and at all times I am *too lazy* to do so much work. I simply sit down to the typewriter, I have learned to play on a bit, and without a single note to guide me, rattle off a lot of stuff to puzzle friend Dadant and others. It "goes" that way every time. This confession will, no doubt, serve to make the readers exercise charity when they scan over the stuff I send in; they will be willing to make allowance for much I say.

[Friend Byer, we would rather accept a lot of "stuff" written by a practical bee-keeper sitting on a bee-hive reciting his experience, than the most polished article by a literary genius. As to the clipping out of unnecessary words, trust us to do that for you. If you look closely, you may discover that we have done this already.—Editor.]

Crop Rather Short and Late

What a contrast in weather conditions of the May just passed as compared with the May of 1911. Last year it was hot, and the ground as dry as a bone during all the period referred to; in fact, nearly all through June and July as well. This year cool and rainy—rainy for days at a time—and the bees had but about one day in six to get out to the willow and fruit blossoms. At this writing, June 11, there are signs of dry weather, and the ground is beginning to bake hard where the soil is of a heavy clay loam.

The honey season, if we have one, will be late, as the clover is just beginning to show a blossom here and there. I should say that, on the whole, the rainy weather of May has improved conditions for the bee-keeper, as the clover has picked up considerably; as for this spring's seeding it is coming on finely, which condition augurs well for next year as a great clover year. Bees are in good shape, generally speaking, although there are some isolated cases where heavy losses have occurred.

The Demaree Plan—One Fault

The Demaree plan of keeping down swarming is mentioned in the American Bee Journal for June. It will work well except for one difficulty hard to overcome in most sections. While many claim to have *all* the old honey out of the brood-nest by the time clover opens, that is a condition I have never yet seen in any large apiary. The result is, especially if you use a deep frame—that a considerable quantity of dandelion or other dark honey will be in the brood-combs that are raised above the queen-excluder, and this will darken the clover honey when extracted together. Where color is no object, the Demaree plan is the surest and simplest plan I know of to control swarming. But *always* leave at least one comb of brood below, as with full sheets of foundation, the bees may neglect the lower chamber altogether, the queen may disappear, and the colony be ruined.

SOUTHERN BEEDOM~

Conducted by Louis H. Scholl, New Braunfels, Tex.

How Many Colonies for a Living?

Of the many questions propounded to us this is one of the most common, and it is a difficult one to answer. There is so much that must be considered, so much that hinges on the subject as to how many colonies are necessary to afford a living for their owner.

While one person may be possessed of sufficient executive ability to enable him to manage a thousand colonies very easily, there are many who can not manage more than a few hundred. Upon this then depends, to some extent, the kind of a living one may expect to make from bee-keeping.

It is well to remember, however, that the mere matter of being able to look after large numbers of colonies is not the only factor that must be considered. There are bee-keepers who make more profit from a less number of colonies by following intensive bee-keeping. The bee-keeper who manages larger numbers, in a manner by which much loss through waste is allowed, may not make profits equal to the intensive bee-keeper with far less colonies.

He who has started right, with only a few colonies of bees, and has gradually worked himself into the business, will find that he can manage just a few more colonies each year, thus increasing his number to many hundreds, if his skill permits it. Such a one would be fully able to look after 500 colonies properly, with some additional help during the busy season, of course.

Generally speaking, we may place the average yield at $5 per colony, or $2500. Deducting about 25 percent as an approximate expense of labor and cost of production, interest on capital invested, and depreciation from wear of supplies and appliances, the net income would be about $1875. These are only estimated figures, and due allowance must be made for the location and the forage in reach of the bees, as well as the favorableness of the year.

Numerous factors have a bearing on the honey yield in any locality, such as weather conditions, precipitation or rainfall. Atmospheric conditions in some instances may not be just right during the blooming period of the flora from which the honey yield is expected. Taking all these things into consideration, a sufficient conclusion may be drawn as to how many colonies may be kept for a living.

Go Out and Visit, or Travel

Did it ever occur to you that a person who stays continually at home and does not go out into the world, generally becomes more easily dissatisfied with his business, yes, even with himself and his surroundings? A person constantly "pegging away" at home, without a frequent change to rouse him up, becomes narrow in his views, "sot in his ways," and is easily discouraged under the slightest provocation.

The secret of success in up-to-date bee-keeping is not found in simply binding one's self down to every day hard toil the year around. The men who are the most successful in their business ventures are, as a general rule, those who get out frequently and "rub up against" and get acquainted with "doings" outside of their own. It gives them new ideas, has a resting effect, and helps to refreshen and brighten a person's mind. The bee-keeper, therefore, should plan his work so he can get out into the world occasionally.

A Strong Point in Favor of Honey

When advertising honey it is important to bring all factors to the front that have a strong bearing on the economy of using it in place of other commodities, especially syrups and the numerous preserves and jelly preparations on the market. To make honey go with all these competitors selling at what seems to the consumer a much less price, it is necessary to show why the price of honey is apparently higher, but actually lower in the end. How are we to do it?

Of course, we have harped on the more nutritive qualities of honey, its purity and healthfulness, etc., but, although that is excellent education, there is one point that has been seriously overlooked which should be held constantly to the front. It is that, compared with other sweets, such as syrups and the various fruit preserves and jellies, honey will go much farther.

To convince a customer a tumbler full of honey should be placed side by side with the same quantity of any of the other preparations, and notice taken of the number of slices of bread that may be spread with each.

Since honey is so much sweeter and "richer," it is not necessary to use so much of it to get the proper "taste" with whatever food it may be used. It simply goes farther, and that should be advertised.

Can't Do Without the Bee Journal.

Gentlemen:—Enclosed you will find my renewal for another year to the "Old Reliable." I simply cannot do without your paper, and I believe if I could not get it I would certainly have to give up keeping bees, so closely is it linked with my bee-keeping life. You can certainly count on me for life, as I get more pleasure and profit out of a single number of your paper than a whole year costs.

Walter E. Atkinson.

Baltimore Co., Md., Sept. 14, 1910.

Souvenir Bee Postal Cards

We have 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with stanza of poetry, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for $1.10. Send all orders to the office of the American Bee Journal.

Members in Attendance at the Annual Meeting of the California State Bee-Keepers' Association Held at Los Angeles, Feb. 6 to 8, 1912.

CONTRIBUTED ARTICLES~

Amount of Honey Used by a Colony in a Year

BY ADRIAN GETAZ.

> Adrian Getaz says that where the winters are cold a colony needs for its annual consumption about 200 pounds of honey.......It would be of interest to know just how much of that estimate is based on reliable data and how much on guessing.—*American Bee Journal*, Vol. LI, No. 12, page 357.

The quantity of honey consumed by a colony must vary considerably according to the strength of the colony, the climate, the nature of the flows and other conditions. Figures given can be only approximate averages. The amount required must fulfill three objects:

1. Support the life of the bees. This means not only what is necessary to keep them from starving, but also enough to keep the temperature of the hive up to the proper point and to enable the bees to exert the necessary muscular efforts to accomplish their work.

2. The production of wax. The wax is secreted by the organs of the bees at the expense of the honey they eat in about the same way as the milk of a cow is produced at the expense of the food she consumes.

3. Feed the brood, or, more properly speaking, find the amount of honey necessary to prepare their food, whether this is in the form of secretion from the salivary glands of the bees or a partially digested mixture of honey and pollen. We will now consider these three subjects separately.

Keeping Up Life.

How much honey will bees consume daily merely to keep alive and also keep up the temperature of the hive and do their work?

On that subject I have only one experiment to quote: A French apiculturist, Mr. Harroult (in 1900), kept some bees in an observatory hive in order to solve that problem. They had no queen, and, therefore, no brood to feed, and they were not given enough food to induce wax secretion. The temperature of the room was from 60 to 64 degrees Fahr., during the day, and never below 48 during the night. The daily consumption for each bee was an average of one-fifteenth of her weight. This would be one-third of a pound for a colony of 20,000 bees.

But these bees were inactive. Furthermore, not having any brood they did not try to keep the hive at such a high temperature as is required for brood-rearing. The room was quite warm. For these reasons they must have consumed much less than they would under normal circumstances. The one-third of a pound should be raised at least to one-half.

Wax-Production.

Our next inquiry is, how much honey does a colony consume to produce the wax necessary for their use, and incidentally how much honey do they consume to produce one pound of wax?

That last question has been answered in all sorts of ways, varying from 2 to 30 pounds of honey for one pound of wax.

One or two points have to be made clear before going further: Given 2 colonies, A and B, A is furnished all the combs needed, and B has to build its combs. Suppose a very heavy honey-flow starts suddenly, colony A will be able to store at once all it can gather, perhaps 5, 6, or even 10 pounds a day Colony B can not gather anything at the start because there is no room to put it. It takes at least two days to start wax production, and two or three more to build enough comb to speak of. Under such circumstances A may, at the end of a week or so, have gathered 30 pounds of honey for each pound of comb that B has built. But it would be absurd to say that B has consumed 30 pounds of honey to produce one of wax.

Most of our leading writers have quoted Huber, Milne-Edwards and Dumas in support of the ratio between honey and wax they give. But that is a blunder. All that Huber and Milne-Edwards or Dumas tried to prove, and did prove, is that the wax is the product of a transformation of the honey eaten by the bees in the same way as milk is a transformation of the food eaten by the cow, and, furthermore, that pollen has nothing to do with wax-production.

Several attempts have been made to solve the problem by feeding confined bees and weighing both the honey fed and the wax obtained. The results vary between 5 and 15 pounds of honey to one of wax; perhaps more, I have not all the details. As far as I know, most of the experiments were more or less defective—too few bees were used. No attention was paid to the temperature of the room where they were kept, and yet this has an important influence on the results obtained.

No queen was given. Undoubtedly a queen even caged would have encouraged the bees and caused them to work more earnestly. No attempt was made to discriminate between the part of honey consumed that went to keep the bees alive or to keep the temperature at the proper point, and to that which was really transformed into wax. Another point which has so far entirely escaped attention, is the age of the bees employed. I may be mistaken, but I think that while the young bees might consume all the honey they could and transform it into wax, the old ones would merely content themselves with just enough to keep alive.

Even if the experiments were well conducted, and I think some of them may have been, the results obtained under such conditions can not be applied to bees working under normal conditions. So we may as well dismiss them entirely, once for all.

Direct Observations.

A few years ago a French apiculturist, Sylviac, thought a swarm just hived could furnish the solution of the problem. It is assumed that the bees composing the swarm fill themselves with honey. As the size of the honey-sac of the bees is known, and the weight of the swarm will give the number of bees, at least near enough for practical purposes, the weight of the honey held by the swarm can be easily ascertained.

During the first three days after being hived, the bees will devote all their time to building comb, and but few will go to the field. It may be assumed that what they bring in may offset what they consume merely to support their life, and that the amount of honey brought out from the parent hive is entirely used to produce the wax obtained at the end of 3 days.

The following year the experiments were repeated extensively not only by Sylviac, but also by quite a number of leading apiarists. Leaving out a few exceptional cases, the results are from 2 to 6 pounds of honey to one of wax. Quite a discussion followed in regard to the reliability of figures thus obtained.

In 1885 Mr. M. M. Hasty (see Gleaning in Bee Culture, 1886) experimented on nearly the same line of observation. A swarm was hived, and 4 days after the combs built were cut out and taken away. The operation was repeated at the end of 8 and 12 days and an average taken. In order to know the amount of honey consumed, the swarm was weighed every day, morning and night. The difference between the night and the following morning weights will give the consumption during the night. That between the morning and night of the same day will give the amount gathered less the consumption during the day. Assuming that this is the same as during the night, the sum of the two figures would give the amount gathered.

Substracting from the total gathered in the 4 days, the weight of the honey and pollen found in the combs, and 2 ounces per day supposed necessary to keep the bees alive, the remainder was evidently used to produce the wax obtained. This gave very near 3 pounds of honey for one of wax, after some corrections were made on account of the weights obtained being of nectar and other details.

I think this 3-pound ratio is too small. Like all those who have made similar computations, Mr. Hasty took for granted that the consumption during the day is the same as that during the night. That is an error. In mid-summer the day is about twice as long as the night, and very likely the bees are more active in the daytime. This correction would raise the 3 pounds to about 4.

In the Argentine Republic a large amount of dark, inferior honey is harvested every year, and can not always be sold even at a very low price. Mr. Brunner, Superintendent of the Agricultural School of Cordoba, besides his own crop, buys all he can and feeds it to his bees in order to produce wax, as this sells readily and at a good price. The process is very simple. Feed the bees as much as they will take, and cut out the combs built every week, except, of course, those having brood, or, rather, those in the brood-nest. He found that it takes 7 pounds of honey to produce one of wax. But these 7 pounds cover all that the bees consume for all purposes whatsoever. How much of this is used for the production of wax can not be told.

His memoir (Apiculteur, 1904) does not give any information on that point. By rights, what his bees may gather when there is a flow should be added. But bees bountifully fed and having their combs to build, do not bring in anything worth speaking of, except the pollen necessary for brood-rearing.

A few interesting items are brought out. Until mid-summer the bees readily build combs in the main body of the hive, on both sides of the brood-nest. Then they quit. But if a super is given with starters, they will resume work there and continue during the balance of the season. No explanation is offered.

None, or but very little wax, is produced when the temperature is below 61 degrees Fahr., or above 100 degrees. The most favorable temperature seems to be between 65 and 73 degrees. These figures refer to the outside temperature, not to that inside the hive.

The question may be yet viewed from another point. Chemical analysis shows that the amount of *carbon* contained in a pound of wax is 2½ times as great as that contained in a pound of honey. It follows then that 2½ pounds of honey, at the very least, must be consumed to furnish one pound of wax. In fact, it takes more. The chemical reactions that take place during the process require the expenditure of a certain amount of what scientists call *energy*. The production of energy in turn calls for the consumption of a certain amount of food of the *carbohydrate* class, which, so far as the bees are concerned, means honey.

(*Concluded in the August issue.*)

American Bee Journal

Closing Up the Season When Working for Comb Honey

BY G. M. DOOLITTLE.

This is something which we hear very little about, and something on which very much of our success as apiarists depends. I have several times written on the importance of a thorough knowledge of our location, so that we may know about the time of blossoming of all the nectar-yielding flowers, especially those which give enough nectar to furnish a large surplus in a good season. This knowledge tells us we should put on our supers to take advantage of these honey-flows, and when we should give more room, if the supers are nearing completion during the middle of a clover flow, or at the commencement of the expected flow from basswood, or some other nectar-secreting source which is peculiar to *our* locality.

This is an important subject to the bee-keeper who expects success in his undertaking with the bees. But I consider a thorough knowledge of the "wind up" of the nectar yield of similar importance. Any man, or woman, is very poorly equipped in the matter of producing honey, especially section honey, who does not know when, in an average season, the main yield of nectar is to begin; and he will find himself in circumstances nearly, if not quite, as disastrous if he is unacquainted with the normal closing of the season.

Yet hundreds, if not thousands, of our would-be bee-keepers can not tell which of the flowers about them give the honey which they find in the sections. It is well to remember when in search of the "mean time" of our bloom from any source, that excessive rainfall, when coupled with a "cool wave," will retard this bloom very much, and a high temperature, with a period of drouth, greatly hastens it. Then, if we are located in a level country the nectar-flow will not last as long, as will be the case where we have low bottom-land, with rising hills or mountains within the range of flight of our bees. Our season will be prolonged to the utmost limit if much of this hillside faces in a northerly direction.

Now, having the knowledge of our field in mind, we can use it to great advantage if we apply it intelligently. Most of us have a clover yield of either white, alsike, alfalfa or sweet. We find out about the normal time of these clovers beginning to bloom, and put on our supers of sections in accordance. It is equally important that we know when this bloom will normally end. Then we will watch the temperature and rainfall during this period to see how much out of normal things are likely to be, governing ourselves accordingly.

Having given the required amount of section room up to the middle of a normal flow of nectar, it behooves us to be careful from that time on in giving additional supers. If the flow has been good up to this time, we are more likely to err by giving too much room than the other way, as we do not make due allowance for the dwindling of this flow toward the end. Up to the middle of the flow our aim has been to give all the room the bees could occupy, but from now on, while we should have an eye to the same object, there is the added thought that great care should be given to producing at the close of the season the marketable product in the greatest amount, instead of little of such product with much in the unfinished state.

The easiest thing any thoughtless bee-keeper can do is to have the larger part of his product in an unfinished shape at the close of the honey season; for it is only natural, when we see the nice, white combs growing in the sections, with a good supply of nectar coming in from the fields, to think that the bees can occupy more, and still more room, thus doubling or trebling our product, forgetting that this yield may already be on the wane, and this added room be to our detriment through less work being done to finish the sections that are so nicely under way. But it is not always easy to decide in these matters.

I remember of giving an extra super to all of the colonies when the nectar yield was apparently at its height, only to have three-fourths of the sections in the whole apiary unfinished at the end of the season; while had none of these last supers been given, I would have had twice as much marketable honey with half the work and no worry. Having a good colony on scales so that we may have a record of the yield each day, gives a better idea of what may best be done. But in any outlook it is better to err on the side of retrenching, after the middle of our normal honey-flow, rather than on the side of expansion. Then, it is well not to bring supers of empty sections from the storage room while there are many on the hives in the apiary not worked in; far better to equalize those already there. Some colonies will have all their room occupied, while others have none, or from this to some nearing completion.

An exchange just now works to good advantage, and costs little if any more effort than does the bringing of more supers from the storage-room. Take the nearly completed super from the colony doing the best work, and exchange it with that on the colony having its super from one-fourth to one-half full, when both will bring their surplus, as a whole, to marketable shape at the close of the season.

This part was impressed upon me by running out of sections one year when the season was apparently at its best, though little past the center of the nectar yield from basswood. I knew that were I to order sections at that time, they must of necessity come too late to be of any use, so I inspected those on the hives, finding the supers as mentioned above. The thought of equalizing these sections in accordance with the work being done by each colony, rather than having so many supers on each hive, was thus impressed home upon me, and after the exchange was made, and the season ended, I had nearly every section completed, and with no injury to any colony, or any loss of surplus, as far as I could observe.

Since then, where I thought any colonies might need more room when nearing the close of the season, I have given this room by adding an empty super of sections filled with thin foundation *above* the supers already on. In this way should the secretion of nectar hold out beyond the normal, the bees would go up into this super, and if the season did not continue long enough for the completion of all, those which were unfinished were of much value for "baits" for use the next season in tempting the bees into the sections earlier than would otherwise be the case.

Borodino, N. Y.

What an Apiarian Department at the Illinois State University Could Do

BY E. J. BAXTER.

(*From the Illinois Agriculturist, published by the Illinois College of Agriculture.*)

There are a number of good reasons why an Apiarian Department should be established at the State University, under the supervision of the College of Agriculture. The pursuit of bee-keeping for the production of honey is one of the most profitable branches of agriculture, considering the amount of capital required, and the time necessarily employed for its successful management. There are thousands of tons of honey going to waste in this country, almost every year, for the lack of bees properly cared for to gather it. It is not only necessary to have bees to gather the honey, but these bees must be under the management of thoroughly competent and practical bee-keepers, who will know how to care for them from the beginning of the year to the close.

Bee keeping is not all profit and no work, as many imagine. The bees must be looked after, and their needs and requirements attended to like any other live-stock. The right thing must be done at the right time to insure the greatest success, otherwise bees are the most perishable and the most unprofitable live-stock that one can own. How is this knowledge to be gained? Very easily if there is an Apiarian Department established at the State University under the management of a thoroughly competent and practical bee-keeper.

Bee-keeping for profit is not an intricate study. It can easily be acquired by any one of average intelligence who will apply himself with a will and determination to master it under the guidance of a competent and practical instructor. Nor does it require much time and preparation to become sufficiently versed in bee-keeping to start an apiary of one's own on a small scale, provided the owner will keep on informing himself from every source possible. One or two season's preparation under a master such as I have referred to would be ample for a person who has developed a love for the pursuit and a desire to learn all about it that he can. And when I say one or two seasons, I do not mean that he must be at it every day. Far from it. Bees do not need attention every day in the year, as do the other farm stock.

In the latitude of the Illinois State University very little if anything can be done with the bees until the first warm days of April, and from then on until the last of November the work required will vary with the season and the condition of the weather. Some weeks they may require several inspections, again there may be many weeks when they will require little or no attention at all.

As to the profit: That will depend entirely upon the location, the weather, and the competency and practicability of the owner. In a reasonably good location in the State of Illinois, where there is plenty of white or alsike clover in the summer, and plenty of heartsease and Spanish-needle in fall, one can reasonably expect to gather from nothing up to 150 pounds of extracted honey per colony; the quantity depending upon the weather conditions being normal. I have gathered as high as 250 pounds per colony, but this is the great exception, and must never be counted upon in Illinois. One hundred and fifty pounds of extracted honey at 7 cents per pound wholesale would equal $10.50. Thus you see it is possible to make from nothing up to $10.50 per colony in one season. My average net returns per colony, per year, for the past 10 years has been $3.83, and yet I do not live in a very good location for the production of honey. I have seen other records of production that were considerably ahead of mine, so bee-keeping, intelligently followed, for the production of honey is a very profitable pursuit. This is especially true when you consider that one man can take care of 400 or 500 colonies of bees, doing nearly all of the work himself with the exception of extraction. Furthermore, after he has become well established there will be about one-half the year that he has nothing to do.

This, however, is not all of the profit there is in bee-keeping. Many of our fruits and farm crops *must* have cross fertilization in order to produce fruit and seed. For instance, take the Kieffer pear, all of our pistillate strawberries (and even some of our staminate ones), the wild goose and other plums, many of our cherries, many of our apples, and probably other fruits of which we know nothing as yet. When it comes to farm crops, the number that must be cross fertilized in order to bear or produce seed seems marvelous. It is sufficient to mention all of the clovers, buckwheat, melons, cucumbers, pumpkins and squashes. All of these must have cross pollenation in order to produce a crop—and the honey-bee is the one means upon which we must rely to do the work. True, there are other insects that visit the flowers more or less regularly, and in more or less numbers season after season, and thereby help to accomplish this cross pollenation.

I saw a statement, recently, by an eminent naturalist, who is making a study of this subject, in which he says that there are about 60 species of insects in this country, more or less widely distributed, that help to cross pollenate our flowers by their visits to them, but that the honey-bee does vastly more in this respect than the 59 species of other insects combined.

It would be the province of the Apiarian Department to study this subject as thoroughly and carefully as possible, and to make experiments. This cross pollenation theory (if still only a theory) is one of the most vital ones bearing upon agriculture and horticulture today, and its thorough solution may mean the added profits of millions of dollars to our farmers and fruit-growers.

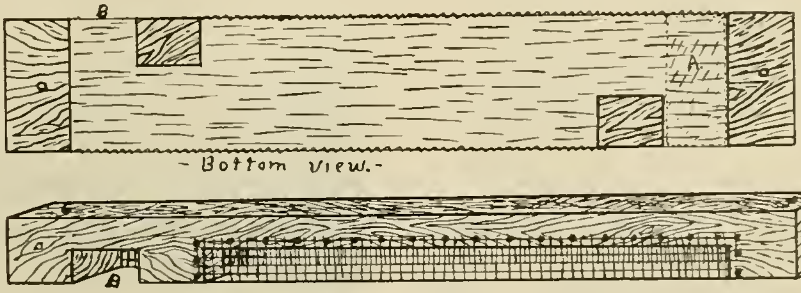
Another thing that we would expect the Apiarian Department to do would be to carefully and thoroughly study the various bee-diseases that now prevail or that may hereafter appear, especially the foul brood diseases that threaten to annihilate the bee-industry in so large a portion of our State, to find a preventative and a cure, if possible, for these most dreaded diseases, and finally to so thoroughly post and equip itself as to be able and competent to assume the administration of the State bee-inspection laws.

Nauvoo, Ill.

A Convenient Hive-Entrance

BY L. H. COBB.

The hive-entrance shown in the diagrams below is 12 inches long, 2 inches wide, and one inch thick. The dimensions can be varied to suit the conditions. A strip of ordinary screen-wire is tacked on each side. The openings for the bees' entrance are in opposite ends.



L. H. Cobb's Robber-Proof Hive-Entrance.

This entrance has many uses, but it is pre-eminently a robber discourager. When robbers have to pass from one end of a hive-entrance to the other in a 2-inch passage, among enemies, they are slow to take the risks. The entrance also confuses them. If it becomes necessary to close up the hive entirely because the bees will not defend themselves, it can be done safely, as they will have ventilation, and the two screens prevent robbers from passing out the honey. You can keep them in as long as you choose.

A sheet of tin long enough to cover the screen on the inside, and a strip of wood for the outside should be provided to darken the screen when desired. It is well to do this when the entrance is first put on a nucleus or weak colony, so the field-bees can learn the route, and they will not be confused much when it is removed in case of robbers.

If it is desired to close the entrance entirely, a piece of tin can be slipped behind the inside entrance, and a little block made to fit in the other entrance, as shown at A in the diagram. Blocks can be used for both openings, but it is more trouble to put the inside one in place, as the entrance has to be lifted.

To close for moving, place both blocks of wood in the entrances and fasten the whole firmly to the bottom-board with screws through the holes, shown in the diagram. Be sure the little blocks in the ends are thick enough so they will be held firmly when the entrance is screwed down tight. This method is so much more convenient than fastening wire over the entrance that this feature alone is worth all the trouble of making them.

Valley Falls, Kans.

Something About European Foul Brood and Its Treatment

BY DR. C. C. MILLER.

As has been said already in these columns, there is no need to be utterly discouraged if foul brood makes its appearance. But there is need to be wide awake and to be constantly on the watch for its *first* appearance, and then it is important to take action promptly. I can from personal experience speak only of European foul brood. With that variety I have an unpleasantly familiar acquaintance. And I know that it would have made a big difference with me if I had taken it at the start. But I had foul brood two years before I knew it. The first case that occurred made me a little uneasy, but there was no way by which I could tell what the trouble was, for there was not at that time the great convenience of being able to send a sample of the suspected brood to Washington for diagnosis, and I shall always hold a grudge against Dr. Phillips that he did not take his position there sooner than he did.

It is said that European foul brood spreads with great rapidity in an apiary, with much greater rapidity than the American variety. It may be so, as a general rule; but in my case it took it two years to become a very serious matter. That was in 1909, and I think the principal cause of the rapid spread through the apiary at that time was the general exchanging of combs, so that it looked just a little as if I was trying to spread the disease all I could.

The thing to be on the lookout for is the yellowish brood. It is not yellow, but yellowish, yet that yellowish hue makes it so distinctly different from the pearly white of healthy brood that you will easily spot it if there be only a single cell in a hive, just as you would spot one black sheep in a big flock of white ones. In any case, if there is anything of a suspicious appearance about the brood, write to Dr. E. F. Phillips, Agricultural Department, Washington, D. C., for a box in which to send him a sample.

Besides the reputation for rapid spreading, European foul brood has the reputation of reappearing after apparent cure more than the American. That reputation seems to be confirmed in this locality. A number of cases have apparently yielded to treatment, and after a time the disease has shown up again. This with both the brushing and the dequeening method. Of course, I can not tell how that compares with American foul brood, for I have had none of that brand of the disease, and am not very anxious to have it, even for the pleasure of experimenting with it. And here is a good place to say by way of parenthesis, that there has been a grim sort of pleasure in experimenting with European foul brood, a pleasure very real in spite of its grimness. But as to the disease reappearing of its own accord, I can not speak with any degree of positiveness, for I can not tell in any case that the bees have not contracted the disease from some infected colony in the surrounding neighborhood.

Now as to choice of treatment between the shaking or McEvoy plan and the dequeening, or Alexander plan. The shaking plan is supposed to be equally efficacious in both kinds of foul brood, the dequeening only in European foul brood. Dr. Phillips is strongly opposed to the dequeening plan. I have great respect for the opinions of Dr. Phillips, and a strong friendship for the man. But I can not see this matter in the same light that he does. Very likely our different view-points have something to do with our views. Dr. Phillips is engaged in a very earnest crusade against the diseases that have already made such havoc, and that are sure to do still more havoc if left to their own course. He thinks that while the dequeening plan may be safe in the hands of those sufficiently skilled, it may not be so in the hands of others, and so it is better that all infected combs should be destroyed. I look upon it from the standpoint of one who has been through the fire, with the wish that others may be saved some of the scorching experience. Perhaps that does not very fairly express it, for I am sure that Dr. Phillips wants to save others just as much as I—possibly more. But here's the thing that comes up before me; it is the sight of those hundreds of empty frames out of which combs had been cut, good combs except for the disease, which combs were all melted up because I thought that was the only safe thing to do. I don't know enough about it to be entirely sure, but I *think* I might have been just as well off to have saved all those combs, if I had known enough in the first place to have used the Alexander plan, or a modification of it. I suppose I may be told, "Even if you do so, others will not be so careful, and in the hands of the inexperienced the fooling with the disease and trying to save the combs will be the means of spreading European foul brood still more."

I don't doubt that looks like reasonable ground, but the very persons who hold it have taken different ground with regard to American foul brood. If it be the right thing to take such very conservative ground in the case of European, why not say, "The only safe way with American is to burn up bees, brood, combs, hives, everything?" And that is just what some think is the best thing, provided only a single colony is in question, but when it comes to a considerable number we are advised to save what can be saved; the bees, the unaffected brood, the wax that is in the combs, and the hives. In the case of European foul brood, if we can get a step farther, and save good combs without melting them into wax, why object so strenuously to that? Is it taking so much more risk than we take in saving all the other things?

But the saving of the combs is not the only difference in the two kinds of treatment. Take 2 colonies side by side, alike in all respects, each of them similarly affected by European foul brood. Treat the one by shaking, same as for American foul brood, and treat the other by leaving it without a laying queen for a certain time. Then compare the 2 colonies as to strength a month later. The latter will be much the stronger. The difference will be accentuated if the season be a very poor one, in some cases the shaken colony being only a remnant of its former self, sometimes so discouraged as to desert by swarming out. Indeed, I should say that the saving of comb is the smaller part of the gain.

Taking all this into consideration, it seems to me the right thing that the whole truth should be known, and run the risk of carelessness in some cases, just as we run the risk of carelessness by recommending shaking in the case of American foul brood, rather than to insist that in all cases a funeral pyre must be made of the hive and everything in it.

Marengo, Ill.

Buckwheat Growing in the East

BY GRANT STANLEY.

Until a few years ago the bulk of the buckwheat crop was grown in a few favored localities. A few farmers outside of these districts, however, managed to grow about what was required for their own use. As a result, along with the increasing demand for this product, the price has been forced up to nearly that of wheat. But in the last few years farmers everywhere throughout this section of the country are manifesting nearly as much interest in the growing of buckwheat as they are in the growth of other crops.

A Field of Buckwheat in Bloom.

Land that has been standing idle for years and permitted to run wild with briars and golden-rod is now being broken up and planted to buckwheat. No buckwheat was grown in the township in which the writer resides until 3 years ago, while, at present, one-third of the farmers are growing it.

This is certainly a good indication that the growth of buckwheat is to be materially increased, and that we need not feel any alarm about exhausting the supply from which we get the cakes that have been so beautifully set to song and story, and which grace our breakfast tables during the winter months.

Buckwheat is a profitable crop to the farmer. A farmer living some distance from me remarked recently that he purchased his farm among the hills 30 years ago, and that the payments were made by growing buckwheat. It does well on poor soil where most other crops would prove a failure. It grows too rank on river bottom soils, and is likely to go down and be difficult to harvest. New soils or clearings are admirably suited to growing it. Where land is not available for this crop the following will give satisfactory results: After harvesting the clover crop, plow the land and seed to buckwheat. When the buckwheat has been harvested and removed from the field, plow again and seed to rye. The following spring the land should again be plowed and put in corn. This will improve the land for the corn crop with the crop of buckwheat that much gain. Buckwheat is also a quick and reasonably sure crop, and this alone is sufficient to warrant more of it being planted.

Bee-keepers everywhere should encourage farmers to grow it, not alone for the honey the bees secure from it, but as a means of profit to the farmers themselves. Some years, although blooming in great profusion, it yields no nectar. In many localities smartweed also blooms abundantly during the period of buckwheat bloom, and very much of this honey is sold for buckwheat honey. It somewhat resembles it in color, and where the two are worked at the same time by the bees, the apiarist standing near the hives in the evening, in an effort to scent or locate the aroma, will not easily be able to note the difference.

Where bees are paying their visits in great numbers to the buckwheat during the early hours of the day, and the weather is sultry, we can feel certain their visits are not being made in vain.

Nisbet, Pa.

The Bee-Keeper and Orchardman

BY JOHN PASHEK.

I noticed in Gleanings in Bee Culture, March 15, 1912, page 167, an article written by C. Koppenhafer, where he shows his fine orchard and his bees among them, and explains the opposition of his neighbors to the bees.

Many of us have the same trouble. Some fruit-growers can not understand that we bee-keepers are their best friends. The bees do no harm to the fruit whatever, and the fruit-growers could not exist without the bee-keepers. But those who make these complaints are those who have no time to read the bee-papers and agricultural papers.

We raise fruit-trees around The Dalles by the hundreds of acres, fancy peaches, cherries, and everything else. Just now our orchards are in full bloom, and the bees are very busy on them. There is the largest fruit prospect here ever known. Our fruit-growers begin to understand that they must have more bees if they want to raise fine fruit. I am renting my bees out in those large orchards during blooming, and getting good pay for it. I am selling books, bee-papers, and lecturing on bee-culture. I put articles in papers, and take every opportunity to urge fruit-growers to keep more bees on the farms.

I put all my section honey in nice cartons, with all directions and information on them, and it sells for 5 cents more per section than any other honey in the market.

The Dalles, Oreg., April 19.

Good Results from Hives With Immovable Combs

BY F. GREINER.

In one of the late numbers of the Bee-Keepers' Review, I find an article which treats of the almost forgotten box-hive, telling how to obtain good crops of honey without transferring to a movable-comb bee-hive. Box-hives are very rare here, but we find quite a few modern hives in small lots kept by farmers; the difficulty with most of them is that the combs in them are as immovable as those in the box-hives. I have had occasion to handle such for some friends. For the benefit of some of our brethren who may be "bothered" with either box-hives or movable-comb bee-hives of the above pattern, I will describe my method:

When the time has come when such colony begins to need more room, I add a brood-chamber full of foundation filled frames. With the box-hive this will have to be turned bottom up, when the prepared brood-chamber may be placed over it and things made reasonably tight. After this upper story full of foundation filled frames has been on the hive for a week, the foundation in the frames will usually be found partly drawn; possibly some eggs may have been deposited in the new combs by the queen. I make no special examination except what I may see by a glance upon the top-bars and into the bee-spaces.

If a fair start has been made in the newly added brood-chamber, I proceed to drive the bees up into this upper chamber by pounding on the hive and and also gently smoking them. I keep up the drumming for some 10 or 12 minutes. The object is to drive the larger part of the bees into the upper box. When I think this is accomplished, I quickly lift off the upper chamber, place it on a new bottom-board and give it the exact location of the old hive, while the latter is carried a few rods off and given a new location. In almost every case the queen will have gone up with the bulk of the bees, and is thus left on the old stand, while, of course, the old moved hive has no queen.

It will be found that the old hive is rather destitute of bees, but there will be enough left to take care of the young brood. The entrance should be contracted for a week or two and a ripe queen-cell must be given on the second or third day; or, better, a just-hatched virgin queen may be allowed to run in at the entrance. This old part of the colony will build up into a good swarm by fall, while the new part with the old queen will give the surplus honey, section honey of the best quality. Supers should be added from time to time as needed. There being no old combs in the hive the resulting section honey will be free from all travel stain. The season would have to be exceptionally good, and the flow continue until late in the fall, or no surplus could be expected from the part with the new queen, but the following season it will be in the best of shape to give another forced swarm' treating again as has been described.

Naples, N. Y.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Are Swarms Caused by Foul Brood?—Leather-Colored Queens

I have 3 colonies of black German bees, which I think are affected with foul brood. I wintered 4 colonies in my cellar, and after I put them out this spring they did quite well for a time except that one colony was weak. About 2 weeks ago this colony swarmed out. I caught the queen and killed her, thinking they would return to the hive they came from, but although they did, they went away again and did not return. I saw then I had made a mistake. What do you think was the cause of their leaving like that at first? They seemed to have honey enough, too.

One of my neighbors has a number of colonies of Italian bees, and he tells me that he has a colony that every pleasant day will swarm out, and after a little while return to the hive. They light all around on the grass. Would it be all right to place a new hive with starters in place of the old hive? Do you think foul brood would cause this trouble? and how can I tell for sure whether I have foul brood? Something surely is the trouble, as the larvæ in over half of the cells die when quite young, and some of the cappings are sunken, although I sometimes find live larvæ under the sunken cappings. The dead larvæ are not ropy, and I can not detect any more odor than is common.

If I can save these 3 colonies I intend to requeen them this summer with Italian queens. Which kind do you recommend, the 3-banded or leather-colored? and when is the best time to requeen? NEW YORK

ANSWER.—It is not easy, without knowing fuller particulars, to say just what was the trouble. One would be inclined to think of a hunger swarm, since it occurred so early, but you say there was plenty of honey. It is possible that the old queen was lost in some way and a lot of young queens started. Then when you killed the first queen that issued, they swarmed out and left with the next.

Yes, it will be all right to put a new hive with starters in place of the old hive when a swarm issues, and let the swarm enter, provided you get the queen with the swarm. Only, instead of starters it will be better to have full sheets of foundation, for if you have only starters you will get more drone comb than you want.

It is hardly likely that foul brood had anything to do with the bees swarming. You can make sure whether you have foul brood by sending a sample of the suspected comb to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C. If you write him in advance he will send you a package in which to send the sample. It will cost you nothing.

The 3 banded leather-colored Italians are probably as good as any. Summer or fall is a good time to requeen.

Bees Hanging Out—Black Bees in Hive

1. My bees have been hanging from the top of the hive to the ground. They fly around the hive and then cluster. Only a few seem to work. They have been doing this for two weeks. Are they getting ready to swarm?

2. I bought them last year for pure Italians, and now there are black ones in the hive. Could they have been pure Italians? This is my first year with bees. OHIO.

ANSWERS.—1. I don't know enough about the conditions to answer. If no nectar is to be had, that may be a sufficient reason for their idleness. If there is a good flow of nectar, hanging out might be a sign they are getting ready to swarm, and yet they would hardly keep that up for two weeks. So, on the whole, it looks more as if there is nothing for them to do, yet that may not be the case at all. Give them more room and more ventilation.

2. You do not say whether there were any black bees in the hive last year. If the workers were all properly marked last year, it is possible that the queen was superseded last fall or this spring, and that the new queen is mismated. If there are only a few black bees in the hive, they may be from other colonies; for bees do more in the way of changing from one hive to another then is generally supposed. Look in the hive and see whether there are any black bees among the downy little fellows that have just hatched. If there are, then either the queen has been changed or the queen you bought was not pure.

Swarming—Will Cutting Out Queen-Cells Effect a Safe Cure?

Here is a little bee-history and two questions: On Nov. 12, 1911, mercury 12 degrees above zero, I put my 2 colonies of bees into the cellar. These will be called No. 1 and No. 2 from this on. They wintered well, few bees dying and falling on the floor during their confinement, which lasted almost 5 months. I did something I never did before and believe it worth reporting. I left the bottom-boards on and the summer entrances just as they were on the stands outside, and to give better ventilation I lifted the tops and carried them back one inch. This gave an abundance of air circulating through the hive, and prevented dampness or mold in the hives or on the combs. I mention this procedure because the winter preceeding I placed 4 colonies in the same cellar, turning the entrances toward the wall, and gave no ventilation save what they got from the summer entrance. I lost almost all my bees, and the hives were full of moisture and mold.

April 14, 1912, temperature 70 degrees above, I carried Nos. 1 and 2 out on the summer stands. No. 1 was rich in honey and populous in bees, covering every frame in a 10-frame dovetailed hive. No. 2 was not so rich in bees nor honey.

I had some partly-filled sections from the preceding season, these I fed from time to time in the open, as the weather was damp and cold.

May 19 No. 1 sent out a good sized swarm at 2 p.m. (This No. 3) was placed on the old stand, and No. 1 was moved the width of itself east. May 23 the weather looked threatening, and though it was only 4 days since No. 3 issued, I moved No. 1, the parent colony, 12 feet away, instead of waiting 8 days as instructed, thinking we would deplete it more to move on the 4th day, while flying, than to wait until the 8th day, when the weather would probably be cold or rainy.

May 31 No. 1 sent out a good sized secondary swarm. Being away from home my brother hived it in an 8-frame hive with full foundation wired in. When I got home in the afternoon of the same day we opened No. 1 and cut out all the queen-cells. We then placed a loose door in front of No. 1, and picking up one frame at a time we shook the secondary swarm on the door. In this way we had a good chance to watch for the queen. We found 2 queens and killed one. Since this experience No. 1 is seemingly happy and is working.

May 23 No. 2 sent out a medium-sized prime swarm at 2 p.m. It was hived and placed on the old stand, the parent colony moved the width of itself, and each allowed to remain there 8 days. This new swarm, as you see, is No. 4.

Now May 31, 8 days after No. 4 came out of No. 2, No. 2 was moved 12 feet away. The workers from No. 2 went to No. 4 and were slaughtered by the thousand.

1. Why did No. 1 swarm the second time!

2. Why did No. 4 kill the fielders from No. 2?

3. If a colony is rich in bees and honey, and is apparently ready to swarm, is it a safe or sure procedure to cut out all queen-cells? ILLINOIS.

ANSWERS.—1. For the same reason that any colony sends out a swarm; because there were two or more young queens in the hive, and enough bees in a prosperous condition to afford to swarm. If you had left them 4 days longer there would likely have been no second swarm. Killing one of those queens probably made no difference, for if you had let them alone one would have killed the other. But destroying the cells probably did make a difference.

2. I don't know. Can't make a guess. Never heard such a case before.

3. If you mean safe and sure to prevent swarming, no. In some cases it may prevent swarming entirely. In some cases it may delay it a week or two. In some cases it may delay it only a day or two.

Bait for Bee-Hunting—Swarms Killing Drones

1. What is the best bait to use for hunting bees?

2. One colony of my bees swarmed yesterday and returned to the hive. What do you think was the cause of it?

3. When bees fly off through the woods how far can you look for them? When they get up above the trees how far can I look for them?

4. Does it make any difference when I kill the drones?

5. About how long do you think it will be before that swarm comes out again? TEXAS.

ANSWERS.—1. Honey is probably as good as any.

2. It may be that the queen was not able to fly with them. It may be that it was an after-swarm or a mother colony in which there was a young queen which was making her bridal trip, and a lot of her bees flew out with her.

3. If you mean how far it is worth while to look for a swarm that has flown away, I should say that they might go any distance inside of 5 miles, and possibly farther. I don't know that getting above the trees would make any difference.

4. Yes, it will save something in the way of feed. If you should kill them all, and if there were no neighboring drones, your young queens reared without any drones would rear no worker-bees, only drones. But you needn't be alarmed about getting all killed off. When you have killed off all you can, the likelihood is that plenty will be left.

5. If my first guess was correct, they might come out again in a day or so. If my second guess was correct, they would likely not come out again.

Trouble With Ants—Bees Not Working in Supers

1. I have 6 colonies of bees. The smaller ones are bothered with large, black ants. Is there any way of stopping them?

2. What is the reason that bees will not work in the supers? I put 2 sections of comb in the middle of each super before putting them on, but the bees work in the body of the hive. WISCONSIN.

ANSWERS.—1. On page 167, under the head of "Timely Hints for June," you will find an answer to your question. As mentioned there, ants annoy the bee-keeper rather than the bees. It is decidedly annoying to have them crawling over the hands and biting. Yet it may be well to add that there are ants and ants. Go far enough South and you may find ants that will destroy a colony sometimes in short order. Even in the North there is a kind to be dreaded. You say yours are "large, black ants." Most likely that means ants that are a quarter of an inch or so in length, which are large in comparison with little red ants. But if you have the big wood ants that are ¾ of an inch long, then that's another story. I've had no little trouble with them, and they are hard to combat. They get between the bottom-board and the board on which it rests, and honey-comb the bottom-board. Sometimes there will be merely a shell left, so that you will hardly notice anything wrong, yet a little touch when hauling bees might break through a hole to let the bees out. Carbolic acid may do something toward driving them away. You may also poison them. Take two pieces of section, or, perhaps, better still, two thin boards 4 inches square, or larger, fasten upon each end of one of them a cleat ⅛ inch thick, and lay or fasten the other on it, thus leaving a space of ⅛ inch between the two boards. Mix arsenic in honey and put between the boards. The bees can not get into so small a space, but the ants can. Or, put poison in a box covered with wire-cloth that will let the ants in but keep the bees out.

2. Your letter is dated May 20, and at that time it is very unlikely that the bees were getting enough to work in the supers. Certainly they were not here, and I am farther south than you. Don't expect your bees to do anything in the supers until there is enough coming in to fill up all empty cells in the brood-chamber. Time enough to store honey for you after they have stored all they can for themselves.

Getting Bees from a Chimney—Do Swarms Ever Return

1. Do you know of any way in which I can get bees from the chimney of a house?

2. Will a swarm that once leaves ever come back to the same hive? NEW JERSEY.

ANSWERS.—1. I don't know of any very good way. If any one else does, perhaps he will tell us. I've had such bees offered me if I'd take them, and never thought they were worth the trouble.

2. It is the regular thing for a swarm to return to its hive in a short time after leaving, if its queen is not with the swarm, either because she is clipped or for any other reason. Even if hived, if its queen should be accidentally killed within a day or so I think the swarm might return. If you mean that the swarm leaves by flying off entirely, I don't suppose there's one chance in a thousand for such a swarm to return.

Chilling of Brood—Danger of Poisoning Bees

1. On May 12 a swarm issued and was hived in the usual way, the new hive being placed on the old stand, and frames given with full sheets of foundation. The foundation has been drawn out and the brood capped. Yesterday, June 8, I looked at the colony and the brood is only partly covered with bees, and is dead. I am of the opinion that the change in the weather (we have had a sudden change from warm to cool weather) has caused the bees to cluster over certain portions of the brood to keep it warm, and in doing so they have had to leave some of the other frames of brood, and consequently they have become chilled. This couldn't be a case of foul brood with new frames and new foundation, etc., could it? The larvæ which I pulled out of the cells were white and almost matured, but were not ropy or sticky like a case of foul brood would be.

2. What I want to know now is, will the bees clean out these frames, or would it be advisable to shake some bees in front of the hive from another colony, so as to give the hive more bees?

3. The swarm wasn't a very large one, although the queen keeps on laying. What is the use of it if the brood can not be kept so it will properly mature? I have never had a case like it before.

4. In order to keep the weeds from growing in front of the hives, I have sprinkled salt water around, and it has had a good effect. Last year it was done quite often, and the weeds were kept down. This year they all came up again, and salt is dear if much is used. A friend of mine, who is a chemist, told me he would make up something that I could put in water and use it with a watering-pot, and he said it would kill grass, weeds, or any other stuff where it is put on; but there is acid in it. Now, what I want to know is, whether the bees alighting on the ground would drink any of the stuff and die? I have been afraid to try it without consulting you, for fear of killing

the bees. I might sprinkle around the hives at night after dark, and the solution would be all soaked in the ground by morning. Some have advised me to use crude oil, such as they sprinkle the streets, but I would just like to know that, in the event of my using anything, would the bees get poisoned by drinking some of it. I got my idea from the fact that the bees have been poisoned from people spraying fruit-blossoms; although that is different, for the bees are after pollen and nectar in that case.

NEW JERSEY.

ANSWERS.—1. It doesn't seem at all like a case of foul brood.

2. Giving more bees will, of course, strengthen the colony, but it is no more necessary than if no brood had been killed. As the bees occupy increased room for either brood or stores, they will clean out the dead brood.

3. There is no use in having eggs laid that will not mature, but a queen will keep on for some time laying more than the necessary number of eggs when suddenly cut down as to the room she occupies, provided she is a prolific queen. But she is not likely to continue very long laying more eggs than the bees can care for.

4. I don't believe you need fear killing the bees by poisoning the grass as you propose, especially if the work is done at night as you suggest. But it will be an easy matter to try it before a single hive before you go over the whole apiary.

Melting Up Old Combs

I have a lot of combs from hives in which the bees winter-killed; also from late swarms of last year that starved out during the long, cold winter. How can I convert these combs into beeswax? NEBRASKA.

ANSWER.—If you have enough to make it worth while, the best way to get the wax out of your combs is to get one of the wax-presses or extractors that will leave in the remains a very small amount of wax. To be sure, you can get out quite a bit of wax with a solar extractor, but if the number of combs be large it will pay to get something more effective. For a very few combs, however, it may not pay to spend much, and the solar will do. You may also get out a large percent with a dripping-pan. Take an old dripping-pan (of course a new one would answer), split it open at one corner; put it in the oven of a cook stove with the split end projecting out of the oven so that a vessel set under it will catch the dripping wax. Put a pebble or something else under the inside corner, so as to make the wax flow outward. If the comb be previously soaked with water for several days, and a single comb at a time be laid in the pan, the wax will not be tempted to hide in the cups made by the cocoons. But it will be slow work. You may also break the combs up into bits, provided you can have them cold enough to be brittle, put them in a gunny sack in a boiler or other vessel on the stove, weight down the sack, working it occasionally with a stick, and skim off the wax as it rises.

Having made this attempt at answering, it is only fair to add that I feel like a baby in long dresses compared with the editor-in-chief when it comes to working wax. He has waxed wise in wax-working through many years of experience that I have not had. So I cheerfully yield the floor to him, to make such emendations as he sees fit.

[The only thing the Editor would add is that, with old combs in which many generations of bees have been reared, it hardly pays to render the wax without water, for a great deal of it is soaked in the cocoons and cast skins of the larvæ. Soaking these in water first, prevents the wax from adhering to the residue, or slum-gum as they call it. The last method given is, in our opinion, the best, unless a regular wax-extractor is used. —EDITOR.]

Is Requeening With Pure Italian Stock Sure Cure for European Foul Brood?

I would like to know if requeening from healthy Italian stock is a sure cure for European foul brood; if not, what is?

CALIFORNIA.

ANSWER.—No; the mere fact of requeening is not a cure. It is generally believed that good Italian stock resists the disease better than others, so that the introduction of an Italian queen may be a help, although not a cure. Some believe that the only way to treat European foul brood successfully is to treat it the same as American foul brood, by brushing the bees upon the foundation. The late E. W. Alexander made the colony queenless, and 20 days later gave it a queen-cell or a very young virgin of Italian stock. That left the colony 27 days or more without any eggs being laid. I have treated cases without any eggs being laid for a week or 10 days, a number of cases that were not very bad, merely having the queen caged the proper time. While this dequeening plan may be said to be on trial, I have much faith in it, and in my own practice prefer it.

Increasing Ventilation—Dividing

1. As I am a student in beedom, I am trying to learn a little every day, not only in my yard, which I started 2 months ago, but also from all obtainable reading matter.

Now, there is one main question which I do not find answered anywhere. In Root's "A B C of Bee Culture" it is suggested to put 4 blocks under the brood-chamber in order to give the colony more ventilation. This I have tried for the first time today, and found that it was just the thing. I have never seen my bees as busy as today.

But, while the colony can hardly be guarding all 4 sides of the hive all day long, is there not danger from *robbing?* And how about the wax-moth miller? Is it advisable to leave those blocks in their places *day and night*, or should they be taken out evenings?

2. I bought some bees this spring, and one colony had two brood-chambers, one on top of the other. Now, I have read somewhere, if a man is after *comb* honey, *only one* of those brood-chambers should be allowed. So I took off the *lower* hive, expecting all the bees to be above. But I was mistaken. There was a bunch also in the lower story. I put this hive on a new stand, and expected the bees to return to the main colony. But they *stayed* and worked as though nothing had happened. So I ordered a queen and introduced it according to the directions, but I could not find any eggs when I investigated about a week later. The bees are carrying pollen and honey, and what I would like to know is this: Is it a sign of young brood when bees carry pollen? IOWA.

ANSWERS.—1. While I value greatly the matter of giving abundant ventilation, I'm afraid you are giving it more credit than it deserves, when you think it increases noticeably the amount of work a colony does the very first day. The special value of this abundant ventilation lies in the fact that it does something toward making the bees more comfortable, thus doing at least a little toward keeping down swarming. It would be too much work to raise the hive and lower it daily. No need to lessen the ventilation until cooler weather comes for good, or at least until danger of swarming is over. Don't worry about moths or robbers if the colony is strong. The bees will take care of themselves. I don't know just how the moths manage it, but they seem to work their way into a hive even if the entrance be only large enough for a single bee; but the bees will not allow them to make any headway even if all the combs are exposed, always provided the colony be strong, and especially if the bees are Italian.

2. Bees can protect their stores better if these stores are above the brood, so you would generally find the bees in the lower instead of in the upper story. However, they may have their brood-nest in either, or in both.

I have great respect for men of the cloth, and it would not be polite in me to dispute your word, but I feel quite sure you are mistaken in thinking that when you put the lower story on a new stand the bees "stayed and worked as if nothing had happened." I don't want to encourage you to become a gambler, but if you were one, and if I were, too, I'd count it a safe thing to stake heavy odds on it that every last *field-bee* returned to the old location the first time it returned from the field.

That you found no eggs in the hive a week after the introduction of the queen raises the suspicion that no queen may be present. Yet it sometimes happens that a queen may be present more than a week after introduction before the eggs can be found. Although it is generally said that carrying in pollen is the sign that a queen is present, it is not always reliable. You will find more pollen generally in a queenless colony than in a queen right one, which shows that the bees continue to accumulate pollen after they have ceased to have brood to use it up. But after a little there will be a falling off in the amount of pollen brought in, and you will see the bees of the queenless colony bringing in smaller loads, if they bring any.

Bees Killing Each Other—Remedy

1. Will bees kill each other in their own hive?

2. I had a strong colony a month and a half ago and they have almost gone to nothing. They are constantly fighting amongst themselves, and are neglecting the brood which is dead in the cells. I can gather by the pint bees that they have killed. At first I thought they were robbing, so I moved the hive about 4 miles, and I find it is still the same. Kindly tell me what is the cause and the remedy. NEW YORK.

ANSWERS.—1. It often happens that one bee will kill another in their own hive, provided they are young queens. But under normal conditions a worker will not kill another worker of the same colony.

2. I don't know what the trouble is. It looks a little as if what you call fighting might be the bees driving out diseased bees. If there is further trouble, please give as full particulars as possible either to this office or to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C.

REPORTS AND EXPERIENCES

Binding Bee Journals—A Veil and Shirt Combined

I have learned some good things by studying some back articles in the Bee Journal, so I nail the old journals together one year at a time with small nails driven in from both sides, so that the nails pass each other about four on a side. Tack a piece of board or leather on each side. This will keep the nails from pulling through.

I would like to describe a veil for the benefit of all bee-keeping friends. It is a perfect bee-veil. I read about it in Gleanings in Bee Culture for Sept. 1, 1910, page 558. For those who do not want to look it up, I will describe it. Take an old work shirt and cut the collar out large enough so that you can get your head through easily. Hem in a small piece of wire in lieu of a collar. Now get a piece of ½ inch rope and sew it to the wire collar all around to form a lip to hold the rubber-cord of the veil. The top elastic goes around the hat, and the bottom one around the wire in the shirt, thus you have a perfect veil, fixed so the bees can not get in, and yet you are free and comfortable. I want to thank Mr. Fowls for this, for I had never been fixed so that bees could not get in my veil until I read his plan.

R. E. HICKOK.

Christiansburg, Va., May 4.

Foul Brood in Nebraska

This is 25 miles from Hastings, Nebr. The loss of bees here last winter was about 90 percent or more. What are left pick up slowly. We are having rains now and they are doing better. We had some foul brood last summer, but I have not seen any this spring. I have insisted on all the old combs being burned, and am in hopes that it is gone for good, but that is too good to expect.

J. T. KELLIE,
Heartwell, Nebr. *Bee-Inspector.*

Spring Dwindling Causes Loss

I think this is the worst spring I ever saw for bees. My bees wintered in good shape, but April and May have been so cold and wet that the colonies have dwindled until I have hardly any first-class colonies left, and many of them have only a pint or a quart of bees, when, at this time, they ought to have a hive full of brood and bees.

Parksville, N. Y., May 24. A. W. Smith.

A Fine Vagrant Swarm

I use Danzenbaker hives and supers. The lower supers of the extracting combs are moved above when full, and the empty ones put under. The colony represented is one built up from a vagrant swarm captured from a bee-tree. The bees are of a beautiful yellow and the queen keeps 20 Danzenbaker frames so full of brood that there isn't room for 10 pounds of honey in the two hive-bodies. B. G. Eleritz.

Central Station Apiary.

A Hive Well Protected from Hot Sun.

A California Description

While visiting friends at Orange, I was invited to accompany Mr. L. A. Korse on one of his daily visits to his apiary just out of the city He has 150 colonies, and runs for extracted honey, as most of them do here. The swarming season is on, and many swarms have recently issued. An extra good season comes about every 5 years, when an extra large colony will produce 300 pounds of honey, and they have been known to produce even more, Mr. Korse has kept bees for many years, and keeps his apiary free from disease. California has county inspectors, and the diseases are kept under control. Illinois, my home, will be wise if they follow this examble. L. M. Sells.

Pasadena, Calif., May 21.

Half of an Apiary of 50 Colonies Lost

I lost one-half of my apiary of 50 colonies during the winter.

I am an old man 79 years old.

I am shaking bees according to G. M. Doolittle, and want some queens.

Bedford, Iowa. J. H. Fitch.

Sage Honey Crop Short in California

The present prospects for sage honey are very poor. Not 20 percent of it will blossom. The weather has been too cold. My thermometer stood at 45 degrees this morning. Swarming has been very light. My scale hive has gained only ½ pound in two weeks. I have to feed new swarms, and the bees rob. These are the conditions at this date here. G. F. Merriam.

San Marcos, Calif., May 25.

"Deceptive Honey" from the Laurel Tree?

In regard to the question asked of Dr. C. C. Miller about deceptive honey, on page 117, in the April issue of the American Bee Journal for 1912, I will say that the honey might have come from the laurel tree; there is a small amount of it around here, probably not enough to make a difference, but there is a good deal in some places, and I think I have seen it stated that laurel honey has quite disagreeable properties.

Thomas Leach, Jr.

Sunolglen, Calif., May 20.

Three Poor Years in North Central Texas

Bees have been almost a failure in north central Texas for the past 3 years, owing to drouth. I have moved part of my 300 colonies of bees to Llano county, where I have a better location for them; but a severe drouth is on there now, with prospects anything but bright for a honey crop this present year.

This apiary is 65 miles from my present location. We have had plenty of rain here up to the present time, but we nearly always have to feed the bees in this locality up to the first of June. So, after this year, I will be located in Llano county for a time at least. L. B. Smith.

Rescue, Tex., May 24.

Swarm Settles on Automobile

At San Bernardino, Calif., May 13, a swarm of bees flying in a wedge-shaped column caused a havoc in one of the principal streets. Automobiles and buggies collided with several thousand insects, and the occupants beat a hasty retreat. Women took refuge in stores. The swarm finally took possession of an automobile belonging to Mr. W. C. Leccombe, which was standing at the curb, and defied the efforts of the owner of the machine, who was helpless to move his car for several hours Bee-experts finally coaxed the honey-seekers into a box.

Pasadena, Calif., May 21. L. M. Sells.

Hiving Bees in a Sugar Barrel

We caught a swarm of bees and placed it in a sugar barrel, just before hiving it in a standard 8-frame hive. The boys' mother snapped the picture with the crowd of boys as witnesses. The owner, Ned Berwick, of Hearst Ave., to the right of the barrel, with his hands clasped; Master John and Mr. Frohliger in the rear.

Bees are in fine shape, and ready for the honey harvest. J. C. Frohliger.

Berkeley, Calif., April 29.

Transferring from a Barrel to a Hive.

Clover Prospects Fine in New York

The clover crop in northern New York never looked better, with wet, rainy weather all through May. My bees are in poor condition, but are picking up on dandelion and fruit bloom. The prospects now are for a large crop of honey. J. S. Dean.

Rensselaer Falls, N. Y., May 28.

Horse-Dung for Smoker-Fuel

I noticed an article in the last issue of the Bee Journal regarding the use of cow-dung for smoker-fuel. I have never used cow-dung for this purpose, but I have used horse-dung with great success. Of course, it must be perfectly dry. The smoke from it is mild, and will hold fire much better than any other substance I have ever tried. And, again, it has no bad odor. Some people may be prejudiced against the use of it, but if they will take the pains to try it, they will find it to be all right. C. L. Snider.

Mohler, Wash., June 7.

Bees Wintered Well—Prospects Good.

My bees have wintered fine with but few losses. They are all in 2-story hives, and I find that many have from one to 14 combs of brood, and are doing well, although I shall have to feed until alfalfa comes into bloom, as there is not much else for them to get at present. It has been cold and wet this spring, and we had snow from Christmas time until in April, with but few moderate days.

Corn planting is now on in full blast. So far crops are looking well, with a good prospect for a honey harvest. Alfalfa is nearly 2 feet high, and is doing fine.

J. J. Measer.

Hutchinson, Kans., May 18.

Missouri Loss Heavy Also

I had a loss of about 20 percent. I have 50 colonies in good shape; they are working fine today. Prospects are fair for a honey crop if plenty of rain. Considerable white clover is just coming in bloom. It has been cold and backward here.

Avalon, Mo., May 24. F. G. Ashbaugh.

Not a Colony Lost

My bees are in fine shape. I haven't lost a colony up to date. J. R. Scott.

Paris, Tex., June 8.

Bees Flourishing in Ohio

Bees are doing splendidly this spring. I have increased my little apiary from 5 colonies to 10. Clover has opened in fine shape, and if the weather continues favorable we will have a fair crop. Indications are good for a flow from basswood.

Medina, Ohio, June 1. J. C. Mosgrove.

Losses in New York One-Third

The winter losses are a little over one-third. Clover and other honey prospects are good. I have about 230 fairly good colonies now. Orel L. Hershiser.

Kenmore, N. Y., June 3.

Convention Notice

The annual meeting of the New Jersey Bee-Keepers' Association will be held on Friday, July 12, at the apiary of Mr. Chas. H. Root, at Red Bank, N. J. Program for the same is being prepared. E. G. Carr,

Sec. and Treas.

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

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NUTMEG ITALIAN QUEENS, leather color, after June 1, $1.00. A. W. Yates, Hartford, Ct.

VIRGINIA QUEENS now ready. Untested 75c Tested $1.00. All dead ones replaced.
6A3t S. Click, Mt. Jackson Va.

SEND for price-list of my Leather-Colored Italian Queens. Geo. B. Howe,
7A1t Black River, N. Y.

FRONT line Italian Queens, well bred and hardy. After June 1, 6 for $4 50. Satisfaction guaranteed. J. B. Hollopeter, Pentz, Pa.

GOLDEN Italian Queens, Nuclei, and Full Colonies. See price-list in May number, page 131. Isaac F. Tillinghast, Factoryville, Pa.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
Robert Inghram, Sycamore, Pa.

WANTED—To buy bees, any quantity. Say what you have, and lowest price first letter. E. H. Bruner, 3836 No. 44th Ave., Chicago, Ill.

WANTED — A man to work an apiary on shares, or will sell fine location near Trinidad. Address, 6A2t
R. S. Cotton, Trinidad, Cuba.

FOR SALE—Italian bees in 8-frame hives; free from disease. $7.50 per colony.
Wm. Davenport,
176 Forest St., Winnetka, Ill.

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7A1t D. G. Little, Hartley, Iowa.

FOR SALE—Italian queens bred from the best honey-gathering strains obtainable. Untested, 75c; Select, $1.00; Tested, $1.25; Select Tested, $1.50; Nuclei without queen, 1-frame, $1.50; 2-frame, $2.00; 3-frame, $2.75. For queens and nuclei in quantity lots, and bees by the pound, write for prices and circular. Robert B. Spicer, Wharton, N. J.

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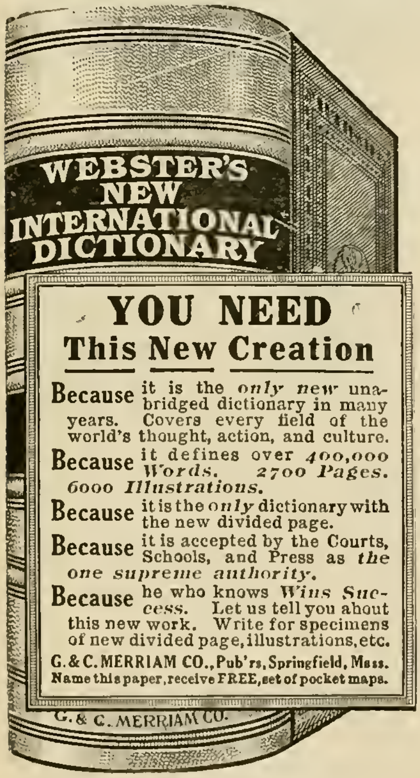

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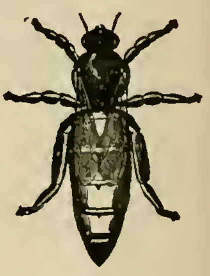

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Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

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Color has not been my special object; but to produce bees that will bring in honey, and store it in supers where it is wanted. I am also paying a great deal of attention to Gentleness among my bees, so that almost any one can handle them.

Annual importations of Queens has kept my stock absolutely pure.

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Virgins	$ .65	$3.50	$ 6.00
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Golden **3-Band Italian** **Carniolan**

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" " " " —2-frame, $4.00; six 2-frame, $23.40

The Drones used in our Apiary for Mating purpose are reared from the very best selected Queens, which is as necessary as the selecting of a good Queen for Queen-Rearing.

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Untested Queens, $1.00 each; 6 for $5 00.
All Queens reared from Imported Stock.
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Red Clover and Golden Queens
Are the Best Honey-Gatherers. Untested, 50c; Select, 75c; Tested, $1.00. Nuclei, $1.00 per frame.
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Write for Fall Discounts—we can save you money.
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THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months—¼ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

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One Tested Queen....	$1.10
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Safe annual guarantee.

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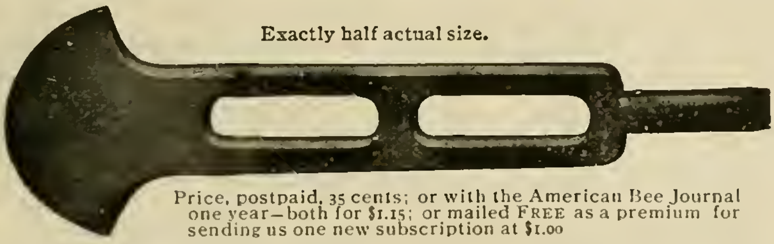

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This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

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The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

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FOR SALE—All Queens bred from improved long-tongued Red Clover stock, as good honey gatherers as money can buy. Reared by the Doolittle or Miller plan. One untested Queen, 75 cts.; 12 for $7.50; 50 for $25.00; 100 to 500, $45.00 per 100. One Tested Queen, $1.50; 12 for $15.00. No nuclei or worker-bees for sale. No brood-disease in my bees. Safe arrival guarranteed.

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10-page Descriptive List free. Untested, $1.00 each; $9.00 per doz. Natural R. C. Golden from Imported Stock. Sel. Untested, $1.10 each; Tested, $1.50. Bees by pound and Nuclei. Leaflets, "How to Introduce Queens." 15c each; on "Increase," 15c, or both for 25c.

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Owing to winter losses there is a considerable demand in the country for colonies of bees. Those having bees for sale should write at once to the American Bee Journal, Hamilton, Illinois.

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For extracted honey. Made of heavy paper and paraffine coated, with tight seal. Every honey-producer will be interested. A descriptive circular free. Finest white clover honey on hand at all times. I buy beeswax. Catalog of supplies free.

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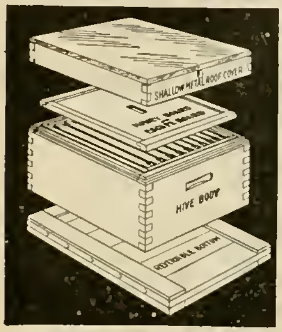

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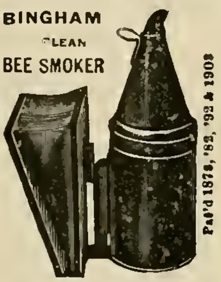

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From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $1.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens — 1-frame, $2 50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; six 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drones as well as the Queens.

We guarantee safe arrival and satisfaction.

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Read what J. I. PARENT, of Charlton, N. Y., says "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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Myers Famous Lockstitch Sewing Awl

Is designed particularly for farmers' use, but it will be found a time-saver and money-saver in nearly every household. It is not a novelty, but a practical hand-sewing machine for repairing shoes, harness, belts, carpets, rugs, tents, awnings, canvas of all kinds, gloves, mittens, saddles, etc.; you can also tie comforts. The Awl proper is grooved to contain the thread or waxed end, and the point being diamond shape will go through the thickest of leather, green or dry, any thickness.

The "Myers Awl" can be used with either straight or curved needle, both of which come with the outfit, and veterinarians will find it indispensable for sewing up wire cuts in stock. The "Myers Lock-Stitch Sewing Awl" is a necessity for the people; can be carried in pocket or tool chest; nothing to lose, always ready to mend a rip or tear. Better than rivets because it is portable. Can be carried in mower or harvester tool-box, threshing kit, or anywhere. If you save one trip to town for mending, you are money ahead. Every farmer needs one, every man who teams needs one. It is the most practical hand-sewing machine for actual use ever devised. Put up with straight and curved needles, waxed thread, illustrated book of directions, and everything ready for use.

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Famous Lock Stitch
SEWING AWL
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The Awl For All
Sews Leather Quick

Our Special Offers of this Famous Sewing Awl.

We mail the MYERS LOCK-STITCH SEWING AWL for $1.00; or club it with the American Bee Journal for one year—both for only $1.60; or we will mail the AWL *free* as a premium for sending us only *Two New* Subscriptions to the American Bee Journal for one year, with $2.00. Surely here is an article that will be very useful in every home. Address all orders to—

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If YOU want them YELLOW try the GENTLE strains of of Swarthmore pedigreed GOLDEN QUEENS.

Swarthmore, Pa.

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EVERY BEE-KEEPER KNOWS

The Worth of A Good Queen

Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

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English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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HONEY AND BEESWAX

CHICAGO, June 20—The sales of honey, both comb and extracted, have been of light volume during the month of June, but we should have some of the new crop during July. This market, however, does not care for it to any extent prior to August. Prices on comb are from 15@18c per lb., where it grades from No. 1 to fancy white; the ambers range from 10@12c, and some of the fancy light ambers are 13@15c. Extracted, white, according to kind and quantity, sells at from 8@9c, and the ambers from 7@8c per lb. Beeswax is steady at from 30@32 per lb. for the average grade.

R. A. BURNETT & CO.

INDIANAPOLIS, June 19.—No arrivals of new honey at this date. Best extracted honey sells at 11@12c in 5-gallon cans. Several cars of comb honey arrived on this market during March, and much remains in the jobbing houses unsold, and no definite prices can be named on comb at this writing. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

NEW YORK, June 19.—Nothing new in comb honey; small shipments of the new crop are coming in from the South, and are selling at from 13@16c, according to quality. Arrivals of the new crop of extracted honey from the South are now coming in quite freely, as well as from the West Indies. Prices are rather unsettled as yet, ranging all the way from 70@90c per gallon, according to quality. Reports from California are rather conflicting, some of them estimating this year's crop at 500 cars, while others claim a very short crop. No offerings have been made as yet that we know of, and no prices established. Beeswax steady at from 30@31c.

HILDRETH & SEGELKEN.

BOSTON, June 20.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c.

White comb honey is wanted here, and will sell at 18@20c per lb. for first arrivals, as it is in demand very much.

BLAKE,-LEE CO.

KANSAS CITY, MO., June 21.—Everybody is anxiously waiting for some new honey. We believe that No. 1 24-section, white, comb honey will bring at first $3.75 per case. Of course, off grades bring a little less. There is little demand for extracted honey, and it is selling for 7½@9c, according to quality.

C. C. CLEMONS PRODUCE CO

SAN FRANCISCO, June 20.—The new crop of comb honey is selling at 15@16c per lb. Water-white extracted honey, 9@9½c per lb; light amber, 8@9c; amber, 7@8c; dark, 5@6c per lb. Beeswax, 23@28c, according to grade and quality. A few small shipments of new comb honey have been received, and the demand exceeds the supply.

J. C. FROHLIGER.

DENVER, June 21.—The old crop of comb honey is all sold. We expect the first of the new crop by the middle of July, if weather conditions are favorable. We have a good stock of very fine extracted honey which we are quoting in a jobbing way at 9c for strictly white; light amber, 8c; strained, 6¾@7½c. We pay 26c in cash and 28c in trade per lb. for clean, yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

CINCINNATI, June 20.—There is very little demand for honey at the present time, nevertheless for the fancy comb honey we have we are getting $3.75 a case from the wholesaler, and $4.00 from the retailer. Light amber honey in large quantities we are selling at 6½@7½c per lb., and fancy table at from 8½@10c, according to the quantity and quality purchased.

Owing to the great loss of bees, no doubt there will be a fall in the price of beeswax, and only for choicest wax can we pay 32@29c per pound delivered here.

THE FRED W. MUTH CO.

Missouri-Bred Queens!

My strain of bees is the result of many years' breeding and selection. I believe they are equal to any, and surpassed by none. They are long lived, winter well, breed early, and are unexcelled honey getters. The workers are long-bodied, good-sized bees, uniformly marked with bands of orange yellow. They are good comb-builders, gentle and easy to handle, and yet protect their homes from robbers. You will make no mistake in introducing these queens into your apiary. I guarantee safe delivery at your post-office, and make a speciality of long and difficult shipments. I endeavor to keep a large supply of queens on hand. Prices as follows:

Untested—One, 60c; 6, $3.25; 12, $6.00. Select Untested—1, 75c; 6, $4.25; 12, $8.00. Tested, 1, $1.25; 6, $5.50; 12, $12.00. Select Tested—1, 1.50; 6, $8.00; 12, 15.00. Two-comb Nuclei with laying queens, $3.00 each; 3-comb Nuclei with laying queens, $3.50 each. Discounts on large orders. 5A6t

L. E. ALTWEIN, St. Joseph, Mo.

Please mention Am. Bee Journal when writing.

Special Delivery

During this month we shall double our usual efforts in points of delivery and service. Early indications not having been most favorable, it is possible many bee-keepers will not have laid in a sufficient stock of supplies, such as sections and foundation, for the clover and basswood crop this month. We are prepared to make up for this oversight by having a large stock of both sections and foundation on hand for instant delivery. We carry nothing but the Root make, which insures the best quality of everything. We sell at factory prices, thereby insuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to bee-keepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

HONEY AND BEESWAX

If you haven't made arrangements for the disposition of your honey and wax for this season, consult us. We buy both in large quantities, and can assure you of fair and courteous treatment, and a good price for your crop.

Shipping-Cases.

To sell your crop to the best advantage it must be well put up in attractive style. We have shipping-cases that answer every requirement of looks and utility. Small producers who sell their crops locally will be interested in the cartons in which comb honey is put up to sell to the fancy customers at top-notch prices. We have honey-cans, too, in cases for those who produce extracted honey. In fact, there isn't anything we don't have that the bee-keeper needs, either to produce his crop or help to sell it.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - - OHIO.

RUSH orders for "Falcon" Beekeepers' Supplies

Beeway sections.	No. 1 quality.	No. 2 quality.
250	$1.60	$1.40
500	2.75	2.50
1000	5.50	5.00
5000	23.75	21.25

Price per lb.	1 lb.	5 lb.	50 lb.
Light Section Foundation.......	.65c	64c	59c
" Brood "	.58c	57c	52c

Hoffman Brood Frames, 10, 35c; 100, $3.00.

No.14 1-story Dovetailed Hive, cover, body, bottom and frames:

8-frame			10-frame		
1	5	10	1	5	10
$1.50	$7.00	$13.50	$1.60	$7.50	$14.50

Dovetailed supers completewithout sectios and starters:

	8-frame		10-frame	
No. 2, 4¼1⅞ completed	5	10	5	10
B2 4¼x1½ sections	$2.50	$4.80	$2.75	$5.30.

Plain sections 25c; per M less.

Dewey Foundation Fastener, each $1.25; by mail, $1.50.

Ideal Bee-Veil, 65c; by mail, 75c.

Untested Italian queens, 1, $1.00, 6, $5.50.
Tested " " 1, 1.50, 6, 8.00

Order from nearest dealer. If you don't know the name drop us a postal. Red catalog postpaid.

W. T. Falconer Mfg. Company, Falconer, N. Y.

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

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Section Honey Extractor

FOR THE EXTRACTION OF HONEY FROM

UNFINISHED SECTIONS

All of the extractor is made of metal and well finished so as to be strong and durable. It is in fact a

Baby Extractor. Suited exactly to the use of the producer who has many sections which he is unable to market and which he wishes to use as bait sections the following season. Total weight of the extractor boxed is 10 pounds. It will come cheaply by express. Price for the reversible style $4.50. Price for the non-reversible $3.00. Section Uncapping Knife - 50c. Address all orders to

A. H. OPFER, 6259 Patterson Ave.
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ALUMINUM HIVE NUMBERS; 1⅛ inchs high

2c Each figure. 50 or more 1½c postpaid, including brass nails.
7A3t HENRY BENKE, PleasantvillSta., N. Y.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc Untested queens, $1: six, $5; 12, $11. Select untested, $1.25; six, $6.00; 12, $10.00. Safe arrival and satisfaction guaranteed. Circular free. **J. P. MOORE,**
Quaen-breeder, Route 1 Morgan, Ky.

Please mention Am. Bee Journal when writing.

Carniolan Queens.

Bred from best Imported stock.
After July 1st

7A1t	1	6	12
Untested - -	$ .75	$4.00	$ 7.20
Tested - - -	1.00	5.50	10.00

Wm. KERNAN, R. D. 2, Dushore, Pa.

Please mention Am. Bee Journal when writing.

CORN HARVESTER with BinderAttachment cuts and throws in piles on harvester or windrow. Man and horse cuts and shocks equal with a corn Binder. Sold in every state. Price $20 00. W H. Buston, of Johnstown, Ohio, writes: **"The Harvester has proven all you claim for it; the Harvester saved me over $25 in labor last year's corn cutting. I cut over 500 shocks; will make 4 bushels corn to a shock."** Testimonials and catalog free, showing pictures of Harvester. Address **New Process Mfg. Co., Salina, Kas.**

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Michigan Established in 1878 Texas

Pioneer Establishment for the Breeding of Pure Caucasian Queens. All Imported Queens bred under my instructions in the Caucasus Mountains. Tested two years before breeding from. The whitest comb-builders on earth. Will work while others starve. Gentle as flies. Hive full of brood all through the season. My Italians need no commenting on—the thousands I have sold tell the tale. Send for prices. 5A6t

A. D. D. WOOD

Box 82, Houston Heights, Tex., or
Box 61, Lansing, Mich.

Please mention Am. Bee Journal when writing.

OUR HAND-MOORE STRAIN

3 Band Italians

Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red-clover. Breed strictly for business. Untested, 75c; 12 for $8.00; 50 for $25.00.

LATSHAW HONEY COMPANY,
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NEW ENGLAND BEE-KEEPERS

Everything in Supplies.
New Goods. Factory Prices.
Save Freight & Express Charges

Cull & Williams Co.
4Atf PROVIDENCE, R. I.

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FINEST QUALITY

of **3-band Italian Queens** reared in the 50th latitude. Tested — June, $4.00; July, $2.50; August, $2.00. Breeder — June, $6.00; July, $5.00; August, $4.00. Doz., 25% discount.

Alexander Lundgren,
5A3t **12 Tomtebogatan,**
STOCKHOLM, SWEDEN.

I Breed Golden Queens

and Bees by the best known methods, and best apiarist; in full colonies in prime condition for rearing Queens. Untested, $1.00; Full 8-frame Colonies, $5.00 each. Guaranteed no disease. 5Atf

M. Bates, Rt. 4, Greenville, Ala.

Please mention Am. Bee Journal when writing.

GOLDEN QUEENS

that produce golden workers of the brightest kind. I will challenge the world on the color of my GOLDENS, and as good honey-getters. Price $1.00 each; tested, $2.00. Breeders $5.00 and $10.00.

J. B. BROCKWELL,
BARNETTS, - - - - VIRGINIA.

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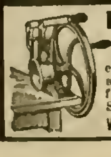

FEED your hens cut green bone and get more eggs. With a **Crown Bone Cutter** you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.

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AMERICAN BEE JOURNAL

AUGUST 1912

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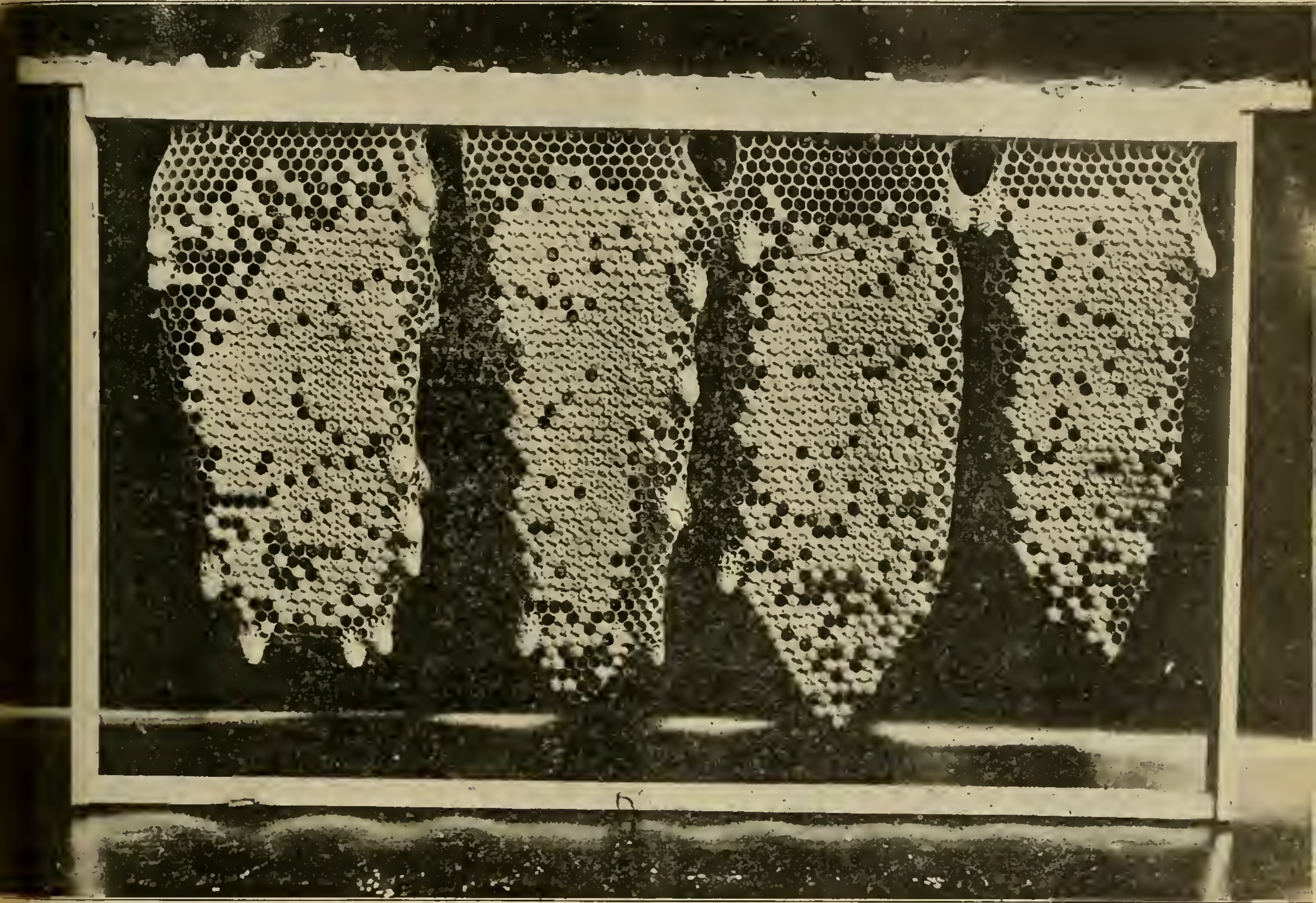

An Improved Method of Rearing Queen-Cells for Home-Apiary Use

LIBRARY of the Massachusetts AUG 2 1912 Agricultural College

The above illustration exemplifies the suggestion given by Dr. C. C. Miller, in the contributions on page 249 of this number. The article was written for the June number, but it was thought best to secure an illustration, hence the delay. The comb is made of three strips instead of two, and is in one of the large Dadant frames of the style used by the Editor.

Dr. Miller, who was 81 years **young** in June, is still showing what practice, experience and judgment can do for success.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
George W. York & Company,
1st Nat'l Bank Bldg. Hamilton, Illinois

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Goes to press the 25th of the preceding month.

(Organized 1870.)

National Bee-Keepers' Association

OBJECTS

The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

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Annual Membership Dues $1.50, one-third (50 cents) of which goes to the local branch where such branch is organized.
Send Dues to the Secretary, E. B. Tyrrell.

Michigan Established in 1878 **Texas**

Pioneer Establishment for the Breeding of Pure Caucasian Queens. All Imported Queens bred under my instructions in the Caucasus Mountains. Tested two years before breeding from. The whitest comb-builders on earth. Will work while others starve. Gentle as flies. Hive full of brood all through the season. My Italians need no commenting on the thousands I have sold tell the tale. Send for prices. 5A6t

A. D. D. WOOD

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Box 61, Lansing, Mich.

Please mention Am. Bee Journal when writing.

FOR SALE---A CAR LOAD OF BEES

Consisting of 300 colonies at $6.00 a colony, spring delivery 1913.

I will accompany the bees and guarantee safe delivery. Purchaser to pay the freight.

MY SEVEN YARDS ARE OVERSTOCKED.

and I do not care to start others, as I have all that I can well attend to. Terms of sale, $300 to accompany copy for contract, and placed on deposit in the Sabinal National Bank of this place against bill of lading; balance payable on arrival of car. Bees are in Standard Dovetailed 10-frame hives, painted, and new bottoms (Danz. style) of ⅞ lumber.

Bees are Italians and Banats crossed, and many of them are pure mated for the production of honey. Could ship if wanted after Sept. 15, this year, at $5.50 a colony. Health certificate furnished.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas.

Please mention Am. Bee Journal when writing.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

GOOD Honey-Flow Coming IN

You Want More Supplies to Get that Honey

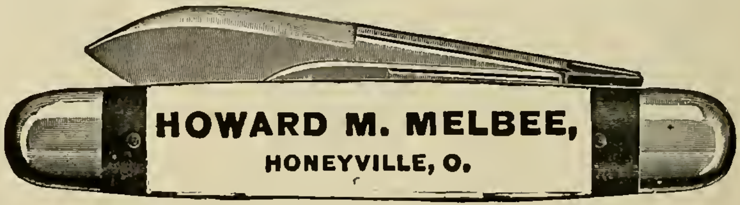
We can fill your order the same day it's received at lowest living price.
Get our **free** catalog.

H. S. DUBY, ST. ANNE, ILL.

P. S.—Send for samples and price of our Best Roofing.

Please mention Am. Bee Journal when writing.

BEE-KEEPER'S NOVELTY POCKET-KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

SURE, Old Combs are Valuable

IF SHIPPED TO US FOR RENDERING

We Extract 99½ Percent of Wax

And then Pay you Highest Market Prices, or 2 cents additional in Trade

YOU CAN'T APPROACH THAT FOR PROFIT

We need great quantities of Comb and Extracted Honey
Write us

THE FRED W. MUTH CO.
"The Busy Bee-Men"
51 Walnut Street, CINCINNATI, OHIO

George W. York
Sandpoint,
Bonner County Idaho

This part of the country (Northern Idaho) is exceptionally fine for bee-keeping, dairying, poultry, etc. The climate is hard to beat. Practically unlimited territory that is unoccupied. The Clovers (white clover, especially), willow-herb, golden-rod, berries, etc., abound everywhere in this region. Land can be had at all prices, depending upon location, condition of cultivation, etc. I will be glad to help any one to a good location for bees, etc., if requested. I, myself, have no land for sale. Soil and drinking water are of the best. No irrigation necessary here.

Untested Italian Queens

The kind I have furnished for years—the rest of the season at these prices: 1 for 75c; 3 for $2.10; 6 for $4.00; or 12 for $7.50.

Some Special Offers

American Bee Journal one year ($1.00) with either "First Lessons in Bee-Keeping" (50c), or Doolittle's "Scientific Queen-Rearing" (50c), for only $1.00; or the American Bee Journal a year with **both** of the books mentioned—all postpaid for only $1.40.

If you prefer, you can have Gleanings in Bee Culture for a year instead of the American Bee Journal in the above special offer; or, if you want both books and both bee-papers, send $2.20.

Send for my **free** Circular of other special offers.

White Sweet Clover Seed

I have a quantity of White Sweet Clover Seed in Chicago, Ill., which I will sell at the following low prices so long as it lasts, all orders to be sent to me here at Sandpoint, Idaho:

5 lbs. for 80c; 10 lbs. for $1.50; 25 lbs. for $3.50; 50 lbs. for $6.50; or 100 lbs. for $12.00.

If wanted by freight, add 25c for cartage on your order.

While I make the handling of bee-literature a specialty, I also take subscriptions for general magazines. Write me what you would like in the way of bee-papers, bee-books, etc., and I will be glad to quote you some attractive prices. Address,

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
Sandpoint, Bonner Co., Idaho

Please mention Am. Bee Journal when writing.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co., Kan., July 15. A. W. SWAN.

GEORGE W. YORK & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada, July 22. CHAS. MITCHELL.

GEORGE W. YORK & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W. YORK & Co.:—The queen I received of you a few days ago came through O. K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line.
Marion Co., Ill., July 13. E. E. McCOLM.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

MARSHFIELD GOODS

BEE-KEEPERS:—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

Continental Cans

are Cans of quality, manufactured in the most up-to-date can factory in the World by expert can makers who, from many years of practical experience, know how. You cannot afford to overlook us when placing your can business.

We Make a Specialty of Friction Top and other Cans for Honey

carrying a large stock of same in our Chicago factory for prompt shipment.

LARGEST INDEPENDENT CAN MAKERS IN EXISTENCE

Factories at Chicago, Syracuse, Baltimore and Canonsburg, Pennsylvania. Write for prices.

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Sales Office: No. 72 West Adams Street, Chicago, Illinois.

If BEES could TALK

THEY WOULD SAY:

"GIVE US DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by George W. York & Company, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1912

Vol. LII---No. 8

EDITORIAL COMMENTS

European Foul Brood, Starved and Pickled Brood

Mr. France sent to the Editor in June a typical sample of what is now called pickled brood. The larvæ are almost black, about full grown, some sealed, and none in the first stages of growth. Concerning this he writes:

> "The sample sent to you, from one of my out-apiaries, was taken from a hive which had at least 30 pounds of honey, some of it right over the pickled brood, but, like misers, they were too saving to uncap it to feed brood. I had 8 such colonies in a yard of 62. No unsealed honey in any of them. I scraped the cappings and gave each one a comb with plenty of unsealed honey, and in a few days the pickled brood was carried out. The sample sent you had some early stages, disease was quite general, about 40 percent of the brood being affected when I took sample. Now it is all gone. That colony is doing fine."

The two letters following suggest cures for European foul brood:

> San Fernando, Calif., June 18, 1912.
>
> Mr. Editor:—Here is my experience on European foul brood, of which I had sent a sample to Dr. Phillips for identification. The first thing I did was to make the colonies queenless, and in 3 days introduced young virgin queens. They came out all right. I took a queen away from a colony badly diseased and gave her to a queenless colony, then introduced a young Italian queen in the old colony and both came out all right. Joseph F. Ballauer.

> Chicago, Ill., June 12, 1912.
>
> Here is a receipt for European foul brood: One ounce of betanaphthol dissolved in one pint of wood alcohol. Mix 1½ tablespoonsful to a gallon of feed; in 4 or 5 days all affected cells will have disappeared, if this mixture is fed for that length of time. I have used it on 30 hives; one-half of the brood was dead. When I looked at them again 3 weeks later, everything was clean and filled with brood. A. H. Opfer.

We hesitated about inserting this last letter, but upon enquiry from a high authority, we were informed that it is doubtful whether drugs have as yet been tried in the United States upon European foul brood. We all know that they fail ignominiously with the American variety. However, so many instances are on record of success with drugs in Europe, where they had not yet recognized the difference between the two diseases, that we think it well worth while to make enquiry. Will those of our readers who have made experiments give us the results, whether they are a success or a failure?

In a visit away from home the Editor was shown, by one of the deputy inspectors of Illinois, some combs from which the queen had been excluded 21 days or more for the cure of European foul brood. The bees had cleaned out all the cells but a dozen or so which contained a brownish, slimy substance somewhat resembling the American disease. This was passed upon by the Department as European foul brood. Those who saw the combs agreed that they would not be safe to breed in, and should be melted up.

Since Dr. Miller told us that his Italians had had the disease, the Editor saw an apiary of Italians with nearly every colony diseased. Evidently they are not immune, though they may overcome it better than other races.

We call the attention of the readers to the several letters on this subject in the contributions. Mr. Pyles' position makes it clear that he establishes a difference between pickled and starved brood. We want to hear more on this subject. But do not give anything as facts of which you have not made positive proof. Incorrect reports published do harm, for they lead the reader astray.

Immunity from Disease

The Canadian Bee Journal, in its June number, calls attention to the desirability of immune strains of bees. This is in reference to the Isle of Wight disease, but it also mentions the possibility of races immune to foul brood. Bertrand has already mentioned, in his small treatise on "Foul Brood and its Treatment," the possibility of having strains of bees which, from long combat against foul brood, might become immune from it. As the Canadians say, "It is Nature's own plan, and the most effective of all."

The Odor of Bees

Some writers in French magazines are going to great lengths to deny that each hive has a special odor. One writer, especially, after acknowledging that the odor of hives is plainly perceptible to our senses, holds that it is absurd to expect each hive in an apiary of 200 colonies, to have its own peculiar odor, distinguishable by the bees from that of any other colony. If we stop a minute to think of the wonderful scent organ of dogs, we will cease to doubt.

The dog not only recognizes his master's special odor among hundreds of people, but he follows his route for miles, with only the faint smell left by the imprint of his shoes. Yet we all wear shoes with surely a similar odor. The effluvia left by us are in some manner recognized by well-trained animals, and endure sometimes, on the ground which we have trod, for several hours. When we think of this, can we doubt that the wonderful smell organ of the bees may enable them to recognize each other. True, they do not rely on this alone, and often welcome strangers who come to them laden with provisions. So will your dog welcome a stranger who in some manner pleases him. Yet you would hardly say that his organs of smell are then at fault.

The fact that bees welcome a stranger who comes to them laden is very prettily compared, in the June "Apicoltore," to the behavior of human beings toward their own race in similar circumstances. They quote the Tuscan adage:

*" Porta aperta a chi porta.
Chi non porta parta."

(Open the door to him who brings.
Let him leave who does not bring.)

The loss of the queen by the bees, in a hive that contains tens of thousands,

---

[*Try reading it aloud, making all the a's sound like in "far," and the "chi" like "key," and trill the r's.]

is quickly detected by them. They sometimes take notice of it within a very few minutes, and usually within two or three hours. Did you ever think how this takes place? Is it not quite probable that the queen has a peculiar and very perceptible scent (to the bees) which pervades the hive and which disappears more or less promptly after she has been removed? This is the most plausible explanation of the quick way in which they detect their loss.

Sweet Clover for Profit

Since the attention of the public has been drawn to the value of sweet clover by the Farmers' Bulletin No. 485, of the Department of Agriculture, which we mentioned in our previous issue (July), the matter has been taken up in a general way. Successful Farming for May contains an article by Mr. Frank Coverdale, of Delmar, Iowa, who appears to be an authority, for he is already quoted in the bulletin. A leaflet on "Sweet Clover and How to Grow It," is also published by the Bokhara Seed Company, of Falmouth, Ky.

The value of sweet clover as a stock food has been accidentally tested by the Editor during the past winter. Owing to the great drouth of 1911, hay was scarce, and a crop of mixed alfalfa, sweet clover and weeds was put up by us, although in an ordinary season we would have used this stuff to fill up ditches. We salted it very heavily and fed it to our two horses. At first they neglected the sweet clover, but after a few days they began to eat it, and were soon so fond of it that even most of the coarsest fibrous stems were eaten clean. This confirms the assertion made on page 8 of the United States Bulletin, that "stock often refuse to eat it at first on account of its bitter taste and strong odor, but when once induced to eat it, by sprinkling it with brine or by other means, they apparently relish it as much as any other forage."

It is very doubtful that sweet clover has proper credit for its ability to improve the soil on which it grows. According to the government bulletin this is one of its most valuable qualities. It accomplishes this by reason of its large roots which break up the lower layers of the soil and by their rapid decay add a great deal of humus to the layers which lie below the usual depths of plowing. In addition to this the stubbles and stems, when plowed under, also add a great deal of humus. But its most important characteristic is its ability, which it enjoys in common with other legumes, of fixing nitrogen by means of the nitrogen-gathering bacteria which live in the tubercles on the roots of the plant. This enables it to add much nitrogen, a most costly fertilizer, to the soil in which it grows. It has the great advantage that it will flourish on poor or hard soils, where other legumes would fail.

As an instance of its effect on land, it may be mentioned that in Alabama, on poor, run-down soil, it produced 6672 pounds of hay per acre the first year, and 7048 pounds the second year, after which the stubble was plowed under and planted to corn. The corn produced 22.7 bushels per acre as compared with 16.2 bushels per acre upon an adjoining plat where sweet clover had not been grown. That 40 percent increase of the crop was clearly due to the sweet clover as a renovator of the soil.

At the Ohio Experiment Station sweet clover increased the yield of corn 45 percent.

A French seed house, dealers in coarse seeds of field plants, wrote to the American Bee Journal Editor, during the past winter, enquiring as to whether there was any other use than seeding, for sweet-clover seed, in the United States, as they had just filled an order for 10,000 kilograms (22,000 pounds) of the yellow sweet-clover seed for a United States firm. It appears to be in growing demand for improving the arid lands of the Western States, as it takes root and grows with a minimum of rainfall.

Regarding the quantity of seed needed, the bulletin and the bokhara leaflet place it at about 20 to 30 pounds per acre of hulled seed. They also notice that much of the seed is slow to germinate on account of its hard seed-coat, which sometimes delays its growth for one year. The Editor has noticed that the seed which is sown promptly as soon as harvested, and not stored, is much more likely to germinate than that which is put away for future use. It is probable that its remaining exposed to the weather prevents it from hardening to such an extent as when stored away. If this proves correct, it will be found best for the producer who wishes to use his own seed, to sow it at once after harvesting it.

The white sweet clover is more desirable than the yellow annual, as the requirement of 2 years for its production of seed makes it more easy to eradicate when its destruction in cultivated spots is deemed necessary. Plants requiring 2 years for reproduction are never difficult to eradicate from tilled fields.

The Nationnl Dairy Magazine (Kimball's Dairy Farmer) is publishing a series of articles on sweet clover. They recommend it highly. See their July number.

Queen-Breeders and Foul Brood

At a meeting of the Washington State Bee-Keepers' Association, held in Wapato, Wash., May 25, 1912, a resolution was passed requesting the Post-Master General to make a ruling prohibiting any queen-breeders with foul brood in their yard, or among bees in their charge, from using the mails to send queen-bees. The resolution suggests that queen-breeders be required to furnish the local postmaster with a certificate from a properly authorized bee-inspector, stating that all the bees in their charge are free from foul brood, or, when no inspector is available, to furnish a copy of an oath before a notary or other authorized person testifying to the same fact; also, that the honey used in their mailing-cages is a product of their own apiary, and that they are not personally handling or bottling honey from other localities.

The above suggestion is good. No one wants to buy queens from a foul-broody yard. On the other hand, until we have inspectors paid by public funds in every State, it would be impossible to have every queen-breeders' apiary inspected. With patience and persistence we will sooner or later get a ruling that will make matters safe for the bee-keeping public, while treating the queen-breeders fairly. We have no doubt that Dr. Phillips is doing all he can to get this matter in proper shape. It is a vital question for the bee-keepers of the land.

Nosema Apis and Isle of Wight Disease

Nosema apis has been the subject of no little attention lately, and views concerning it vary greatly. Some German authorities count it a terrible scourge; others consider it of little account. Latest investigations point to it as connected with the Isle of Wight disease. Dr. Maassen, in the May Centralblatt, says he is convinced that Nosema is not identical with any known bee-disease. While hoping it may not soon be troublesome on this side of the water, we should keep a sharp eye on what is done abroad.

Supplement No. 8, of the Journal of the British Board of Agriculture, is a report on the Isle of Wight disease by five investigators, Dr. Graham-Smith and colleagues. It is exceedingly interesting. It identifies Nosema apis as present in this trouble, and makes evident the fact, already suspected by many, that this disease is variously known as constipation, vertigo, paralysis or May disease, in different parts of the world, from Maine to California, and Florida, in Germany, Italy, Austria, France, Switzerland, Australia, etc. But in very few instances has it been as damaging as it proved to the apiaries of the Isle of Wight and a few counties of England, where it was first noticed in serious amount in 1904.

Although the report mentions a few cases of the disease as appearing in the autumn, the bulk of the testimonials shows that it originates in the spring, during cool, damp, unfavorable weather. This corresponds with all the statements seen by us so far, no matter whence they come.

They say: "The summer of 1910 was wet and cold, and the disease was much in evidence, that of 1911 was fine and warm, and comparatively few cases were reported. With the return of wet weather the trouble has again shown up, and is now as bad as ever."

The most commonly recorded symptom is the presence of crawling bees, with distended abdomens and in very apparent misery, in front of the hive or upon the alighting-board. The term dysentery, when applied to this disease, is usually meant to describe the swollen condition of the bowels. The report quotes Beuhne, who establishes a plain difference between dysentery and paralysis. Dysentery, caused by bad winter food, is evidenced by the inability of the bees to retain an excess of unhealthy feces, which they discharge in the hive or at the entrance. As early as 1861, Samuel Wagner, the founder and first editor of the American Bee Journal, had already stated, Vol. I, page 131, that "the May sickness is not dysentery, but constipation," and ascribed it mainly to bad honey.

The report in question makes it

clear that the disease is not confined to any one spot, but has existed all over the British Isles from time to time.

A very lengthy and scientific description is made of Nosema apis in its different stages, as the authors are of the opinion that this parasite is at the base of the trouble. They say that a fatal infection may be produced in a number of cases by feeding the spores to healthy bees. However, they acknowledge that some bees may be fed on honey containing thousands of spores of Nosema and yet be unaffected by them. They infer that some bees are naturally immune to disease from this parasite. This would explain why our investigators at Washington were unable to produce the disease by feeding the spores. It possibly requires special conditions.

It is further held in this pamphlet that Nosema has been endemic in parts of the country for many years. "Bees of a healthy apiary, in Scotland, which had always been free of disease, were found to be contaminated with Nosema spores in small numbers." The book also quotes the eminent German scientists who have made a study of the subject, and reports Maassen as saying that in Germany there are very few apiaries which are entirely free of Nosema, apparently even when there is no disease. But the same writer says that he has never found a case of dysentery without Nosema.

From all this what are we to conclude? That cold, wet, unfavorable weather, coupled with watery honey, may induce conditions favorable enough to the multiplication of this parasite to constitute an epidemic? That some colonies are more prone to suffer from it than others, on account of being less immune?

A portion of the pamphlet is devoted to a description of the different ways in which the disease may spread, by water, nectar, pollen; by robbing, by interchange of adult bees entering the wrong hive; through parasite-carriers or bees which are immune to disease, but yet carry spores; by swarms being located in hives which have contained disease, etc.

The immense amount of research shown is much to the credit of the writers. This work will form a basis for further researches, and we hope that soon some methods of prevention or cure will be given other than the isolation of the colonies.

A remedy was employed some years ago by O. O. Poppleton, of Florida, who sprinkled the bees and the combs with powdered sulphur. The sulphur kills all the diseased bees, and the sickness is said to disappear. The brood must be removed, as the sulphur would destroy all the unsealed larvæ.

The Italians reported a similar scourge, a few years ago, in the Province of Ancona. They called it by the old name of Mal di Maggio. The remedy there recommended, rather as a preventive than a cure, was the feeding of colonies with a strong tonic tea, made of a solution of lavender, ginger, rosemary, etc., mixed with honey heated to the proper degree.

In our experience, the disease has been very infrequent, confined to a few colonies in cold, wet springs. The bees have, in most cases, overcome it successfully without treatment, and we consider it more as an epidemic than a contagion.

Comb or Extracted Honey?

It is a common thing for a beginner to ask the question, "Which is more profitable to produce, comb or extracted honey?" Then the querist is disappointed because he does not promptly receive a positive answer one way or the other. The truth is that in the great majority of cases no one can answer the question in advance, and the bee-keeper must find out for himself. To be sure, there may be localities where the character of the honey does much toward answering the question. For instance, if there is a predominance of honey of dark color and strong flavor, then it is pretty safe to give extracted honey the preference.

Editor Pender gives this advice in the Australasian Bee-Keeper:

> "Unless the honey-flow is good the comb built in the sections is of a starved appearance, not drawn out fully and evenly and unattached at the bottom, and probably partly at the sides. Unless the season is good and favorable for rapid comb building, the honey of a light color, and the colonies strong in bees—unless you have all these, my advice is, *don't attempt* to produce sections or you will be disappointed. The same quantity or crop of comb honey can not be taken as extracted. In an indifferent season I should place comb honey at about a quarter of an extracted honey crop, whereas in a very good season quite three-quarters of an extracted honey crop would be taken in section comb honey. So, before going into section honey-production largely, study your locality and the season you are likely to have."

Pretty sound advice, but not so easy to carry out in all cases. With a considerable number of colonies on hand, it is generally advisable to have the sections prepared early in the spring if not during the winter, when it is impossible to forecast the season. Indeed, it has happened in the experience of the writer that at the time supers were put on the hives prospects were favorable, and yet the season proved exceedingly poor.

If all the bee-keepers in a given locality are running for one kind or the other, it is a pretty safe thing for the beginner to follow their example until by experimenting on a small scale he may decide it advisable to follow a different course. Many factors have a bearing on the case, such as kind of market and distance from market. Moreover, producing section honey is a separate trade from producing extracted, and it may happen that on the very spot where one man does better with extracted another may do better with comb. The problem is one generally to be worked out by the beginner himself.

Crops and Prospects

We are in receipt of the crop report of the California State Bee-Keepers' Association. We quote their conclusions given after the condensed reports from the different States June 1:

> The California crop will be much below normal, and, so far as I can figure it out, the same applies to the country as a whole. This being the case, there is no use in forcing the little early honey we have on the market which is not ready to buy. The eastern buyers want to be sure of what the conditions are before ordering; there is no settled price, and I strongly urge the producer to be as independent as the buyer for the present. There was no great quantity of honey held over, and I firmly believe these reports to be honest statements of the bee-men themselves, whom we can trust to know the conditions better than any one else. Extracted orange honey is selling to the grocer at 7½ cents per pound. The old crop of comb is clearing up at various prices; no new honey is being offered, and no carload lots of any kind moving.
>
> GEO. L. EMERSON,
> *Report Manager.*

From their July report we judge that the prospect is unchanged, and that honey will be scarce. In Illinois, although the flowers have yielded fairly, especially basswood, the weak condition of the bees in spring, and the tendency to retrieve losses by increase of colonies are likely to cause a very light harvest of surplus. Very little white clover honey has been gathered.

MISCELLANEOUS NEWS ITEMS

Bees and Early Fertilization.—In Prakt. Wegweiser attention is called to the fact that although much is said about bees as important carriers of pollen, seldom is mention made of their being earlier than most other insects that fertilize plants. Take fruit-bloom, a bumble-bee may do as good work on apple-blossoms as a honey-bee. But at the time an apple tree is in blossom there are no bumble-bees to speak of—only the queen of each colony. If from each hive in an apiary, instead of several thousand workers, only the queen were to sally forth to visit the apple trees, there would no doubt be a failure of the apple crop. Beside fruit-trees, there are many other plants which bloom before the season is far advanced, and many other insects beside bumble-bees are found in plenty only after the season is well advanced. So if bees were no better than other blossom-fertilizers in other respects, the mere fact of their earliness makes them of so much marked value as to be well worth emphasizing.

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Colorado Honey Grading Rules.—At the request of Mr. Frank Rauchfuss, Secretary of the Colorado Honey-Producers' Association, we herewith publish the new honey grading rules adopted last December by the Colorado State Bee-Keepers' Association. We call the producers' attention to the fact that they do not include in any of these grades sections that contain more than 50 uncapped cells altogether. A much better price would be secured for honey in sections, on all markets, if some such rule were followed by the major-

Disappointed, but Not Discouraged.
Eastern Illinois Bee-Keepers' Field Meet Held at Watseka, Ill., June 8th.

ity of bee-keepers. The sooner we come to uniform grading, the better it will be for our industry. Much in this direction ought to be achieved by the action of the National Bee-Keepers' Association. Following are the grades:

Fancy White Comb Honey.

Sections to be well filled, comb firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, combs and cappings white and not projecting beyond wood. The wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

No. 1.

Sections to be well filled, combs firmly attached on all sides and evenly capped except the outside row, next to the wood. Honey white or very light amber; comb and cappings from white to slightly off color. Comb not projecting beyond the wood, and the wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

Choice.

Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to amber, but not dark. Wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

No. 2.

This grade is composed of sections that are entirely capped, except the row next to the wood, weighing from 10 to 12 ounces, also of such sections that weigh 12 ounces or more, and have not more than 50 uncapped cells altogether, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

Extracted Honey

Must be thoroughly ripened, and weigh 12 pounds per gallon. It must be well strained and packed in new cans. It is classed as white, light amber and amber.

Strained Honey

Is honey obtained from combs by all other means except the centrifugal extractors, and is classed as white, light amber, amber and dark. It must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

Mr. F. Greiner's suggestion, in this number, of having the crates' weight alike, by sorting the sections, is worthy of consideration. However, we doubt whether this can be done when handling honey on a large scale. We would like to have Mr. Rauchfuss express his views on this matter. With his large experience in crating and shipping honey, he might give us some valuable points.

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Eastern Illinois Field Meets.—The following letter received from St. Anne, Ill., gives a short summary of two field meets recently held in Eastern Illinois. The letter also shows to what extent such meets may be developed along the lines of most value to the average bee-keeper:

Mr. Editor:—A good bee-paper is certainly a necessity to practical bee-keepers, especially since the severe loss that we have all had recently, showing our lack of knowledge in bee-keeping. I believe that bee-keepers are awakening to the fact that they have been neglectful, and will change for the better. It is fortunate for us here in Illinois that we have such men as Messrs. Kildow and Pyles, who are brimful of energy. They are at the head of a movement that the bee-keepers in general will appreciate. It will revive the bee-keeping industry wonderfully.

I am writing from the experience I have had recently, in two Field Days, one at Watseka and one at St. Anne. The meeting that was held in St. Anne June 22, was beneficial to all. A few came from a distance, including bee-keepers from Indiana.

A colony affected with foul brood had been reserved, and after Mr. Pyles had explained the different kinds of foul brood, the audience was given an opportunity to diagnose the disease. The answers were written on paper, and the majority pronounced it European foul brood, while it was the American. Brother Pyles then gave another explanation.

A colony of bees was "shooked" by Messrs. Kildow and Pyles, showing the people how quickly the work could be done, after which a photograph of those present was taken.

It is impossible to put in writing the benefit bee-keepers derive from meetings of this nature. One must be present to appreciate them, and I hope that, not only in Illinois, but all over the country, some efforts will be made to hold such meetings at different places among the bees; they bring results that count.

And now a few words of my experience in treating foul brood: Unfortunately I had the American in my yard. I wanted to get rid of it, and in the right way. I hit upon a plan of treating them at night. At dusk I took a colony into the cellar, turned on the electric light, and shook the bees in front of a new hive containing full sheets of foundation. It was a success. The moment the bees were in the cellar they seemed possessed of fear which made it very easy to control them. I attributed this fear to the sudden change of temperature from warm to damp and cool. They did not seem to think of filling themselves with honey, and in less than 5 minutes all were on the cold floor in front of the new hive. In they went as if driven by fire; strange, not more than a dozen bees flew to the electric light, which was only a few feet away.

These bees were then left in a dark room 48 hours. At sunset they were taken to their own stand and fed a quart of syrup in division-board feeders. Today they are doing well and working hard. All the brood was saved and put on another colony that was affected, and will soon be treated in a similar manner.

The treatment of foul brood is not difficult in the least, but it must be done right.

St. Anne, Ill., July 4. H. S. Duby.

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How Much Can a Bee Carry?—Alex Astor gives some interesting figures in l'Apiculteur. He carefully made a number of weighings, using 10 bees at a time for the sake of securing greater exactness. The average weight of each bee, when empty, was 7.4 centigrams. He gave them thin syrup, 1 part sugar to 3 parts water. Each bee carried from 6.5 to 7 centigrams. Then he fed honey that was very ripe and thick. Each bee carried from 7.4 to 8.4 centigrams. That shows that a bee will carry a heavier load of thick than of thin honey or nectar. One would naturally expect that. It also shows that a bee *can* carry about its own weight of nectar, and a little more than its own weight of honey. Well, cannot a man do the same? Would it be such a very great *stunt* for a man weighing 150 pounds to carry a weight of 150 pounds? But if he were to attempt to carry such a weight for a distance of a mile at the same rate of speed at which a bee travels, he would drop exhausted long before reaching the end of the mile. Moreover, it is possible that a bee might carry a heavier load if its honey-sac would hold it. So it is likely that its own weight is not the full measure of its honey-sac.

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Commissioner Cook and Horticulture in California.—The June number of "Orchard and Farm," published at San Francisco, contains an article concerning the work already done by our friend and co-worker of olden days, Prof. A. J. Cook. His work is also mentioned with praise in the July number of the Technical World. Prof. Cook is already causing a marked progress in his department. Although he is not without opponents in his present work, we feel sure that he will win out by showing his usual ability to make friends through the work he accomplishes.

COMMISSIONER COOK.

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State Fair Exhibits and Premiums.—There is little doubt that exhibits made in public, at Fairs and otherwise, are the best advertisements for our products:

Minnesota is setting a very good example to the neighboring States in the matter of premiums. These aggregate the sum of $1062, divided into 40 different heads. In all but two cases, four different premiums are offered under each head. So there are 158 different awards in the apiary department, no single premium amounting to more than $15. Premiums on a "farmer's collection" are in a special class, and are limited to those residing 25 miles or more from either St. Paul or Minneapolis.

Mr. Scott LaMont, superintendent of this department, whose portrait we give in this number, sent the following circular letter to Minnesota bee-keepers:

There will be "Live Bee" demonstration work for about 4 hours each day, 2 hour in the forenoon and 2 hours in the afternoon The services of competent demonstrators (a gentleman and a lady have been secured, who will explain the every day work with which you come in contact in working and caring for an apiary, either large or small, and any questions you may have to ask will be gladly answered. This will be an excellent opportunity for a beginner, or any one wishing to take up the occupation of bee-keeping, to learn the art of handling bees.

We are anxious to make the Bee and Honey Exhibit the best and most attractive we have ever had. The outlook at the present time is favorable. The prospect for a honey crop is good. The State Fair Board has done its part, and now brother bee-keeper it is up to us to do our part and "make good." We are asking, yea, demanding of the Board of Regents of the State Agricultural College a department for apiary, with a competent bee-keeper and apiarian instructor at the head. There is no better place where we can demonstrate to them the need of such a department than in our State Fair exhibit. So, come to the Fair. Bring or send your exhibit of bees or honey, if possible; if not, come anyway and make the Bee and Honey building your headquarters. All bee-keepers on the ground are requested to meet every afternoon at 2 o'clock in the superintendent's office in the Bee and Honey building, to ask and answer questions that will be mutually helpful and instructive along the line of our beloved pursuit.

MR. SCOTT LAMONT, OF MINNESOTA.

Premium lists are free. Write J. C. Simpson, Secretary, Hamline, Minn., for one, also entry blank. Do it now, and same will be forwarded to you as soon as they are ready.

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A Swarm-Hinderer.—Under this name is described in Prakt. Wegweiser a rim which, from the appearance of the illustration, may be 3 inches deep or deeper, having a series of slats in it, and this arrangement is put under the brood-chamber. It is practically the same as the bottom-rack used by Dr. Miller in his 2-inch deep bottom-boards, only in the latter the rim is not removed with the rack.

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Recipe for Baking Apples.—When baking apples with the core removed, after baking them and while they are hot, fill the holes with honey instead of sugar. It gives them a delicious flavor. If you fill them with honey before baking, you will to a great extent spoil the flavor of the honey.

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Remedy for Ants.—Jesse H. Roberts, of Watseka, Ill., uses powdered cinnamon slightly sprinkled over the boards to keep ants out of both the bee-hives and the cupboards. This is the best remedy of all.

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The Ontario Agricultural College Apiarist, Mr. Morley Pettit, publishes a very complete condensed report concerning crop prospects. The July 11th sheet contains reports from 48 counties. 25 report fair prospect for clover honey, 4 fair to good, 13 poor to fair, and 6 poor.

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The Annual Meeting of the Missouri State Bee-Keepers' Association will be held at the residence of Pres. J. W. Rouse, at Mexico, Mo., Aug. 1 and 2. All Missouri bee-keepers are urged to attend.

J. F. DIEMER, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Novice or Cowan Extractor?—The Best Glass Container to Use

A sister who is new in the business, and who does not expect to keep more than 2 or 3 colonies, asks whether the Novice or the Cowan honey-extractor is the better for her. With the Cowan, when the honey is thrown out of one side of the comb, a little push is given to the comb-basket, and the comb is reversed without being lifted out of the extractor, for the comb-basket swings like a door on its hinges. With the Novice the comb must be lifted out of the extractor to be reversed. This, of course, takes a little more time than it does to shove the comb around without lifting it out, making it well worth while to pay the additional price for the Cowan. But one extractor does just as good work as the other, and if one has no more than 3 or 4 colonies, the little difference in time is hardly worth considering, and the Novice has the preference.

Also, what is the simplest and best looking glass-container for extracted honey? As the Scotch say, that's a kittlish question. What suits one does not always suit another. In some places nothing is more popular than the Mason fruit-jar, because, when emptied of honey, it is just as good as new to be used for putting up fruit. The Premium fruit-jar is not so well known, but has the advantage that the honey in it is more *get-at-able*—quite an advantage when honey candies. Perhaps the simplest of all glass-containers is the tumbler with a tin cover. Honey in tumblers presents quite a pretty appearance, and tumblers may be had in pound and half-pound sizes.

A variety of bottles may be had, and it is not easy to choose between them. When women get to do most of the honey-bottling, it may be that something will be evolved more pleasing to the eye than anything now on the market.

Sequel to "Man Put to Flight"

I have been very much interested in the "Bee-Keeping for Women" page in the Bee Journal, because my wife is the "bee-man" (? of our family. About the only part I have in the enterprise is to buy the supplies, pay for bee-books and subscribe for journals on bee-culture; and then, when I become honey hungry, 'phone the grocer to send me up a few sections. I have equipped my wife with a smoker, a pair of gloves, veil, etc., and have important (?) business up town when a swarm is to be handled. They sting me in the quietest of times.

Up-to-date bee-culture in this immediate vicinity is comparatively a new enterprise, and now that my wife has the above-mentioned equipment, she is sought by the neighboring novices to handle perplexing problems. Brother W., who lives on one of our beautiful avenues, had an obstinate case to handle recently, and asked me one day if Mrs. Horne would not assist him. I informed him that she would be "dee-lighted" to render the service The next afternoon 'phone No. 302 had a call, and Mrs. H. was asked to come over and assist in making a single nursery out of a double one he had in his garden.

Equipped with the aforesaid paraphanalia, and a proud walk, "our professor," (that is what we call her) betook herself to Bro. W.'s posthaste. Sister W. assisted in getting up the hive, tools, cloths, etc., and took her position where I usually do, behind the fig tree. Brother W. did not have any equipment except a pair of very sheer lady's hose on his hands. From the first the bees showed fight, but Bro. W. would not bear the idea of deserting and leaving a woman alone to manage the colony. Finally Mrs. H.'s persuasion, and a sting on top of his bald pate, sent him toward the house.

There were so many bees after him that Mrs. W. was afraid to let him in, but he slapped, fought and begged until she let him in just in time for him to fall on the couch in a faint. He fainted twice, and Mrs. W. became so alarmed she 'phoned for a physician. The bees got so mad they attacked a crowd of children at play out on the street, and one little girl, with a full head of hair, fairly alarmed the neighbors for a block away.

Brother W. is a sanctified Methodist brother, but some one heard him say he had a great mind to kill every bee in that hive, and get some bees of a more friendly and sensible kind.

Mrs. H. says she would not have gotten stung at all, but a puff of wind blew her veil against her nose, which had the appearance of a "Milwaukee" nose for two or three days.

How will this do for a sequel to the story, "Man Put to Flight," in the June number of the journal?

In the meantime I am content to hold my original job, *i. e.*, to furnish the implements, journals, etc., and attend to my town matters. We like the journal very much.

Respectfully, T. N. HORNE.

Never mind, Mr. Horne, some of these days instead of your 'phoning to the grocery the grocery will be 'phoning to your wife for honey.

The Joys of Bee-Keeping

Something must be a little wrong with the make-up of that bee-keeping sister who does not feel a thrill of delight upon reading the following beautiful pitcture from the pen of Miss Ethel Robson in the Canadian Bee Journal:

> There is the first flight of the bees in the spring when you are able to form some estimate of how the bees have wintered and you know that wintering is one of the points in which bee-keepers take great pride; then the first peep into the hives, when, if the bees have wintered well, the sight sets the pulses throbbing with visions of a bounteous harvest; the bees waking from their long winter rest are active and alert, boiling up over the frames, and eager for the busy life so soon to begin, and which they will share for such a little time; there is the sight of fields yellow with dandelion, and orchards white with bloom There are flashes of sunshine after rain, when the air is so full of the hum of bees as to be intoxicating; the joy of sitting quietly on a Sunday afternoon while the bees come tumbling in from the fields; but, best of all, there is the long succession of days spent in the open air with the sun, and the wind, and the bees for companions, when you are drawn close to the heart of Nature and made to partake of all her bountiful life—this is the great joy of bee-keeping.

How It Feels to be a Bee

In the Irish Bee Journal is an article by A. Beatrice Bambaut, who evidently has a lively imagination as well as the powers of observation. Here are two paragraphs from the article:

> It is somewhat hard to realize that at this present moment one-third of the population of the world believes in the transmigration of souls—believes that before his present existence here on earth, man has already gone through a multitude of varied existences, and that if he does not make the most strenuous efforts, he will probably be obliged to go through a still larger number. They maintain that a being can transmigrate into any form whatever, and, according to his good or bad actions, he will pass to the highest or the lowest state Of course, we always feel it to be extremely improbable that our opinions are wrong, and other people's opinions right. But let us assume transmigration to be a fact, and that, to correct such faults as disloyalty or want of thoroughness in our work, or dirty or slovenly habits, we may awake some day and find ourselves to be neatly packed into the tiny body of a bee. How shall we like the change?
>
> I imagine we shall feel quite delightful, for just consider the marvellous increase we shall find in our capabilities. Instead of 2 arms and 2 legs to have 6 legs, blessed with a "versatility otherwise unknown in the realm of legs." Instead of requiring a motor car, a flying machine, or a cab, to have wings on which at any moment we can fly where we will. Then look at the marvellous antennæ, the uses of which are not yet fully understood, but by which bees certainly smell, and which are believed to be the means by which their wants and desires can be communicated from one to the other. It is possible also that bees may possess senses or sensations of which our great coarse bodies can form no conception. By aid of the antennæ they may feel vibrations which never affect us.

Women to the Front in Africa

They are certainly to the front, literally, in the South African Bee-Keepers' Journal. In the May number the first page is occupied with a fine picture of Miss M. Dagmar Sillar, and the first article is on "Bee-Culture for Women," by Miss Mary W. Johnstone. One cannot doubt that Miss Johnstone speaks from experience when she says:

> None but those who have handled full, fresh, "clean" sections of honey-comb can realize the pleasure that it gives the bee-keeper to see the first "taking" of each season. There is an exhilaration about handling honey-comb in sections, fresh from the hive, that surpasses anything in other pastimes, such as poultry-keeping, flower growing, etc. Even the first successful hatch of chickens in a new incubator cannot compare with it!

Bees Balling the Queen

Do you ever have trouble with your bees balling or killing the queen when she is returned after being handled?

When dropped on top of the frames she is likely to commence running all over, and the bees will be very apt to chase and ball her. Especially is this true if you have wide top-bars. Try this "kink:" Turn a frame of brood and bees flatwise and drop the queen among the bees. We have never had a queen killed or injured when returned in this way.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Is the Middleman's Profit Excessive?

In the June issue of the Bee Journal I note an article from Mr. Wesley Foster, of Boulder, Colo., "Honey—the Consumer's Dollar, and Who Gets It?" I have been on the distributive side of business for many years—being a retail lumber dealer—and have been able to make from less than nothing to a little over 6 percent per annum on capital invested, averaging about 3 percent. I think I am accounted as successful as the average in my line of business.

Now, take Mr. Foster's showing on 100 colonies of bees: $240 return on honey produced, and deducting $83 expenses, and allowing $100 for his labor ($1.83 per colony for all labor and expenses), it still leaves $57 for return on $600 investment, or 9½ percent. Compared with my lumber business that looks good.

I am also in the bee-business in an amateur way, having, last year, 20 colonies of bees; amount invested in the business $150. I got 750 pounds of comb honey, rated at 10 cents per pound, $75. My labor, expenses and supplies for these 20 colonies amounted to $1.50 per colony, or $30, leaving $45 for interest on an investment of $150, or 30 percent. Last year, with me in the bee-business, was better than the average, but I have kept bees for 8 years, and keep accurate books; the returns on the money invested are far ahead of the same invested in the retail lumber business.

Most producers and consumers want to eliminate—not the services of the middlemen and their capital—but *paying* for the same. If the people who are finding fault with the middlemen, were compelled to serve a 5-year period holding middlemen's jobs—somebody has to do the service, it cannot be eliminated they would return to their original work much better satisfied with the returns on the labor and capital invested.

G. W. FEHLEISEN.

Madrid, Iowa.

My contention is, that the producer is paying the middlemen too much for doing the distribution. The question is not so much whether the dealer, such as Mr. Fehleisen, is making 3 or 6 percent on his investment, as to how much of the ultimate consumer's dollar he is getting for the act of distribution. I know of several men in the retail business who are making less than nothing, but they are selling goods at 50 to 100 percent above cost. Our system is at fault, and the return to direct dealing, such as the parcels post will help to bring, will eliminate some of the waste in distribution.

The past winter I could have sold my extracted honey to dealers for 6 to

7 cents per pound, but instead of doing this I advertised in local papers, and sold quite an amount direct to the consumers. The cost of advertising was about 5 percent of the sales, and I got 10 cents a pound for extracted honey. I did the middlemen's work for less than they could afford to do it.

At the present time, I am selling honey direct to a tea and coffee salesman who sells the honey as a side line on his route in an Eastern city. This honey nets me 11 cents for extracted, and in this deal I have eliminated all the middlemen but the last one, the retailer. He sells for one dollar a 5-pound package of extracted honey that costs him 65 cents laid down at his station. I do not begrudge him the profit, but at the same time when I can deliver 5 or 10 pound pails of honey by parcels post direct to the consumer, and save the retailer's profit, I am going to do it and give the retailer of food products a chance to get into something that pays better. I would not trade places with many retailers that I know. They do not make a great deal of money, and their methods are too costly. We must have a more economical method of distribution.

It is hardly a just measure to figure the profits in bee-keeping by Mr. Fehleisen's method. I do not know how much salary he pays himself, nor how much money he has invested. I will say, though, that I would consider a man on rather uncertain ground who was not making as much from the capital invested as the prevailing rate of interest at the banks, and that rate is 8 percent in Mr. Fehleisen's State.

The book-keeper for a local lumber yard told me that $25,000 was the least amount that would be required to start a lumber yard, and Mr. Fehleisen has two yards. Most lumbermen that I know got their start in the lumber business. There is not a bee-keeper in the whole United States who has made as much money out of the business as is represented in any of the three lumber yards in our little town of Boulder. The homes and manner of living of the owners of these yards prove it.

At the present time native lumber can be bought at the sawmills in Colorado for $10 to $15 a thousand feet. It retails at from $25 to $30 a thousand feet. Several years ago we bought lumber of a sawmill and had it delivered in Boulder for $12 a thousand, when the retail price was $20. The sawmill man said he was selling it to us at the same price that the lumber dealers paid him.

The whole trouble is, that there are too many middlemen after the business, and in some lines there is scarcely anything in it for them. If we can cheapen the methods of distribution, who has any fault to find? If a dealer can furnish me with a product cheaper than I can get it by going after it myself, I am going to get it from the dealer. I can buy hay and grain of the farmers cheaper than from the feed dealers in Boulder, and I can sell honey to the consumer cheaper than he can buy it of the dealer and retailer.

Mr. Fehleisen figures that I can care for bees at the rate of $1.00 a colony per annum. It cannot be done and give a man fair pay for his time. It takes a good man to care for 500 colonies without help, and there are none that I know of that are doing it without some help. A man who can care for 500 colonies would earn only $500 a year. A man of this ability can make two or three times as much at any other business. It is impossible to support a family in comfort on $500 a year, and $1000 a year is small enough if the children are to have any advantages, and the elders any respite. I should say that $2 to $3 a colony would be nearer what it is worth to care for bees.

I will admit that I wish to eliminate paying an excessive toll to the middlemen for selling me a hat, a pair of shoes, or a suit of clothes, but I will not succeed until co-operative effort has had a larger measure of success. I have eliminated the middleman in a few instances, and know that his profit feels good in my own pocket, and all that is necessary is to keep pushing on. The middleman will live freer when there are not too many of "him." There will always be the need of men to bring the things we want and take the things we don't want, but the faster we can eliminate the ones who are in the way, waiting for a chance to bring and carry, the better it will be for both producer and middleman. The producer must learn to co-operate before we can hope for any marked improvement. What I know of co-operation and direct dealing has seemed good, and so I am working to extend it farther. I hope that this will not be considered as kicking on the middleman.

Colonies Deserting Their Hives

The loss of bees in Montrose county was recorded some time ago. A recent trip has shown me some of the facts about this loss. Last season's crop was poor—less than one case of honey to the hive. The quality was below normal, also. The fall flow did not materialize, and too many old bees went into winter quarters. The poor quality of the honey caused it to granulate in the comb. A prolonged rainy season in October did not help the bees any. Most of the bees weathered through until March, though most were very weak. In March they began to die, and in June the bees were still deserting their hives, leaving brood, honey and pollen.

More pickled brood developed this spring than I ever saw. Many colonies were so weakened that they perished. Others had an abundance of brood compared with the number of bees to care for it. This was the most noticeable phase of the trouble. Absconding soon followed this symptom. Any light on the cause of this trouble, if what I have mentioned cannot be a sufficient cause, will be thankfully received. In some yards 25 percent of the bees were left in June; in others but very few.

The Montrose county bee-men are like others—they do not keep bees as well as they might. More equalizing of stores, capped and hatching brood would have cured this trouble very largely. Where the queens were poor, the colonies went sooner, but many with capable queens perished for lack of young bees and hope. Bees can stand only so much discouragement, the same as folks. The crop in Montrose county will be of small shipping importance this year. The larger producers are working for increase with the hope of filling their empty hives.

Fall feeding and removing the old honey would have prevented this loss very much. A watch of the queens, and seeing that the bees enter the winter with a fine force of youngsters, is a crying need of the bee-man's practice. We are not good enough bee-keepers. Our honey crops have been too easily secured. We do not know how to buck a stiff proposition.

Bees On Forest Reserves in California

The following is a line of work advocated by the California Bee-Keepers' Association, and it is hoped that the bee-men will find it profitable to lease these ranges for the pasturage of bees alone:

The committee on forest reserves, by its chairman, E. B. Shaffner, reported as follows:

1. That it be the sense of this committee that there are vast tracts of valuable bee-range on forest reserves that will produce annually more profit from honey-production than from any other industry, and that as such should be protected by the Government for this industry:
2. We recommend that apiaries be not located closer than 3 miles apart
3. That 10 cents per colony is a reasonable charge for range location.
4. That the Government be requested to reserve roadways to apiaries through homestead entries.
5. That sheep and goats be excluded from such points of reserves as are set apart for bees.
6. That Government permit bee-keepers to remove wild bees from forest reserves where the same can be done without the destruction of timber of commercial value.

Tin Comb-Honey Package

Mr. Paul Hunten, of Somerset, has sent out to many prominent bee-keepers sample supers of his section-holders, and the new tin section and sanitary honey package. The inside of the tin sections are waxed to facilitate the secure fastening of the comb to the tin. One section in each super is left unwaxed to test whether the waxing is necessary. There is one thing about this package that is fine—it is attractive and clean. The section-tin packages are not on the market as yet, and are in process of test. The outcome will be interesting. Mr. Hunten has gone to considerable expense in getting the thing to going, and I hope he will succeed.

[If the new departure proves practical, a description of it will be given in the Bee Journal later. Editor.]

Grading Honey

A bee-meeting in the West approximates a national political convention when the grading rules for honey are considered. It seems to bring out all the pronounced ideas a man has. Mr. Rauchfuss says that he can size a bee-keeper up quicker by inspecting his honey crop graded and packed for market than in any other way. You touch a real live issue when you talk honey grading.

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Climates of the West

The West has as many different climates as could be imagined; in Wyoming and Montana the thermometer sinks down and down until the mercury can scarcely be found at times. Then down in New Mexico and Arizona, while it is not strictly tropical throughout the winter months, the climate is of a mild nature. In the valleys of the Inter-mountain region the winters, as a rule, are mild. Colorado is about on the line north and south where the single-walled hive can be considered sufficient protection during the winter. I do not know of a double-walled hive apiary in the State. Very few give their bees any protection whatever. This is a condition that will change in a few years, I am confident

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

The Ravages of Thieves

The ravages of thieves are a very serious problem with me. They do considerable damage, such as throwing off covers, lifting out frames from the supers, and sometimes from the brood-chambers, and scattering them around the apiary. And if there is honey in the apiary, they never fail to find it. Many times they open the brood-nest and cut out the honey and almost completely destroy the bees. Very often a colony is carried a short distance and burned, hive and all. Many times thieves make fires in the apiary and much damage is done.

Two of my best out-apiaries have been completely destroyed by fire. One just before the honey-flow this spring, and one several years ago. The first one was robbed and burned by a plantation overseer and his negroes, who fired it by placing burning fat pine under the hives.

The last apiary was burned by the only son of a widow. He was in the habit of stealing honey for her, but this time the bees stung him badly, and to get revenge he placed a bunch of leaves and straw on each hive and fired them, and then took to his heels. Only the wire of the frames and the nails were left.

The ravages of thieves cause a loss to me each season of several hundred dollars, and are increasing. But all this damage does not discourage me in the least. I only work the harder to overcome it, with not a spark of hope for it to ever cease, as it has been going on for 15 years.

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Apiary Work

This is the mid-point in the bee-keeping year, when we should both reflect and look forward. It may be that we have not been as successful with our bees as we should. May be we have made too many blunders which have stayed our progress; these we should overcome next season. But what a mistake we will make now if we don't look forward to our business for next season!

There is a greater or lesser flow of honey in every locality in Dixie, and our bees are still making progress. This will not continue a great while. If we wish to harvest a great crop of honey next season, now is the time to make the start.

The Value of Good Combs.

The value of good worker-combs, built straight and even, in good frames, is far greater than the average bee-keeper thinks. Good combs, easy to manipulate, should be the pride of every bee-keeper, and nothing else should be tolerated. It is not enough to shake a swarm of bees into a hive-body, the frames of which contain only starters, for the bees may build some crooked combs, or combs containing more or less drone-comb. This is a step backwards, and such combs should be replaced with good ones.

Now is the best time to sort out such combs, remove the honey and render them into wax; wire the frames and put in full sheets of foundation, if there are no extra combs to put in their places. Insert these in the middle of the brood-nest of good, strong colonies, and they will build good serviceable combs at once. Weaker colonies should be supplied with good, ready-built combs from stronger ones. If any inferior combs contain brood they should be set in weak colonies next to the wall of the hives, until all the brood is hatched out, and if such combs contain unripe honey, it could be fed back to the bees at once, or left with the bees for a few days to ripen.

Queen-Rearing.

Every bee-keeper should learn to rear his own queens from his best stock, or if he is not satisfied with his stock, buy a nucleus with a queen, or get a queen of good stock from a reliable breeder and introduce her into one of his colonies. From this colony combs containing eggs or brood less than 3 days old can be taken and given to colonies made queenless and broodless. They will build many cells which can be removed in 9 days from the time the brood is given and placed in cell-protectors to requeen a number of colonies which have inferior queens. These queens can be found and killed at the time the cells are given.

At this time of the year conditions are ideal for queen-rearing in most localities, and it is by far the best time to do the work. It is important. Your success depends upon this step.

Increase.

No bee-keeper can obtain success without resorting to artificial increase. Even in the spring of the year, when bees have a great inclination to swarm and do according to Nature's plan, it is better, if intelligently done by man, but at this season of the year there is little inclination among bees to swarm, and if increase is made it must be done artificially. This is not advisable unless colonies are strong and heavy with stores, and even then each colony should be divided but once, so each division will go into winter quarters with plenty of stores and a medium-sized cluster of bees.

If there is only a light honey-flow the increase should be made soon. If there is a heavy honey-flow wait until near the close, then follow my method as outlined in the July number of the American Bee Journal, page 205. If the plan is carried out carefully a good increase can be made at each apiary, that will result in a large amount of surplus honey next spring.

Looking to the Final End.

As we make our last round in removing honey, we should keep in mind the wintering of our bees. Frames of sealed brood from the strongest colonies should be given the weak ones from time to time, and some frames of honey should be given the colonies light with stores. Plenty of honey should be left in the apiary to winter on.

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Sketch of Life of Pioneer Bee-Keepers—Help to Beginners

Dear Dixie Bee-Keepers:—To conduct our department in such manner that it will be most helpful to most of us, is by no means a small task for me.

I have often been asked some such questions as the following: "How many colonies should I have before I can expect sufficient returns from them to support myself and family?" and, "How much shall I have invested in the business up to this point?" This can best be answered by those who have followed the bee-business for years, and solely depended upon it for a support.

To this end we wish to produce short sketches of the lives of such veteran bee-keepers, and at the same time produce their photographs so we can take a look in their faces as we read what they have done, and get a lesson from their experience. The photograph of Mr. T. W. Livingston, of Leslie, Ga., appears herewith. He writes:

"Of course, I had to be born, and they say this occurred in Washington Co., N. Y., Feb. 29, 1852. But I began my bee-keeping career in Washington Co., Iowa, near where the city of Ainsworth now stands. At the age of 15, a friend gave me 3 colonies of bees in Underhill hives, and as there was no bee-literature obtainable (so far as I knew), I remained in helpless ignorance until I was 20, when I heard that colonies could be divided and each part made into a normal colony.

"This started me to building 'air-

Mr. T. W. Livingston, Leslie, Ga.

castles' for a great bee-business. It was just the thing, as my bees would not swarm for me. I divided them to my heart's content. It was a great lesson, for the next spring I did not have a live bee.

"But, in the meantime, a few copies of the National Agriculturist and Bee Journal were sent me, and I discovered good bee-literature, and soon read up and began making substantial progress, bought more bees, made a honey-extractor, bought an Italian queen, and soon was the most extensive bee-keeper in that section.

"In 1888 I moved South for my health, and brought my bees with me. Many times I was handicapped, for I met new conditions and some perplexing problems. Coming as they did at this critical time of my life, I did not make as great success as I might otherwise have made.

"The number of my colonies has never exceeded 230 in a single season, located in from 1 to 3 apiaries. I use the regular 10-frame Langstroth hives, and run solely for extracted honey. I tried the production of comb honey in 1-pound sections, but found that the production of extracted honey was far more profitable.

"I have a natural inclination or talent for mechanical work, and I have made my own supplies with a small hand-power machine. Looking back over my work, however, and the unsatisfactory result of using home-made supplies, I would not advise this step. I have never turned my efforts in any direction save bee-keeping. It has been my source of income, and I have raised a family and educated my children. As I look back down the long chain of years of my bee-keeping life, and compare the opportunities with those in other lines, I do not think I could have done better, taking my small amount of capital in consideration.

"The two greatest mistakes I made were the partial adoption of the divisible brood-chamber and the production of section-honey. These might not have been mistakes had I been in a different location. My bees have never been neglected except in cases of sickness, and I have reared all my queens except a few bought for the sake of better stock. Back in my early bee-keeping days, long before I had ever seen a honey-extractor, I made a small one which I used until I saw a Peabody honey-extractor with combs, can and all revolving. Then I made one which permitted only the baskets to revolve. I used this until I made my last model, illustrated in the American Bee Journal of March, 1909, which I think is a little ahead of anything yet invented for this purpose."

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Northern Ontario as a Bee-Country

A friend in New York State sends me the following:

> Please answer the following through the American Bee Journal: How is the country 100 miles north of Toronto, Ont., for bee-keeping? Is the spring late and cold, or does it come with a rush? What have they for bee-pasture, clover or basswood, or both?
>
> Does it cost more to winter bees in a mild climate like that of North Carolina than in Canada, where they are frozen up nine months of the year? I read your article on North Carolina, and am very much interested in that State. But honey from North Carolina brings only 55 to 65 cents in New York city, while honey from Maryland, Pennsylvania or New York brings 90 cents to $1.25. In a warm climate like the Carolinas, the people do not eat honey as in our cold, northern States. Their prices run 12 to 13 cents a pound for comb honey.

As a general rule, the spring season is about 10 days later than at Toronto, but that makes little difference as the honey-plants last just as long as further south, even if a little later in starting. The spring differs very much in different seasons, sometimes coming on with steady warm weather, while at other times it is quite cool all through early May, and *this* year even into June. But from reports received from New York, as well as from other parts of the United States, I surmise that the cool weather was not confined to Ontario, where we "are frozen up nine months of the year."

By the way, I warn you not to think of coming to Ontario, if you have such an opinion of the climate. The worst I ever heard of before in relation to our climatic conditions, was that we have "six months of winter and six months of cold weather," but "nine months frozen"—well, that is "the limit!" I wish you were here at present; you would come to the conclusion that we have at least *warm* weather in July.

As a matter of fact, while our climate is severe in winter, yet northeastern New York can beat us when it comes to registering a low temperature in the winter months. In the locality north of Toronto referred to, we have basswood and clover with some raspberry. This combination can be had in many parts of Ontario not so far north, and 300 miles north of Toronto is as fine a bee-keeping territory as there is in America.

In my estimation, during the next ten years, hundreds of colonies will be located up there in the clover, willow-herb, etc. If a bit younger and alone, that is certainly the place I would tackle, for I regard our northern country as the great honey-producing section of the near future.

As to North Carolina, I know nothing about the country except what my father has told me, and since he has come back a few bee-keepers in that State have written to me. In addition to poplar, sourwood, and other honey-bearing trees natural to that country just where father spent the winter, they have lots of basswood in the mountains.

While I suppose that in warm countries more honey is consumed by the bees than in the north, yet they gather it earlier in the season, so that it really makes but little difference. As to bee-locations, if any one is contemplating moving to another section he should, by all means, go and visit the locality first. Don't depend upon somebody else's judgment, for what may suit one person may not suit another.

So far as Ontario goes, I know much of the country well, but while willing to give general information, I would not think of directing any one to any particular spot. A few years ago I directed a friend, who was living in a poor section, to a place where I knew there was an abundance of alsike, and very few bees to gather the honey it secreted. While no one was crowded by his moving there, it leaked out that I had directed him there, and a few men were pretty "sore on me" for it.

There is lots of room in almost all sections of the continent, I suppose, and if one wants a location, the best way is to look it up and judge of the conditions before moving.

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Slow Yield from Clover—Basswood Just Beginning

At this date we are having a rather slow yield from the clover, although last week the flow was good in most sections. Where bees were strong enough to take advantage of the flow, a fair surplus was obtained, even if there is but little clover in the country.

Unfortunately in many apiaries the bees lost their field forces during the long, cool spell between fruit-bloom and clover, and no matter how good the flow would have been, little surplus would have been gathered. Basswood looks good wherever there is any, and in another week it will open. Personally, we do not look for a big crop, but already more is secured than was looked for, so we are not complaining.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Swarm Prevention

While the amateur looks upon natural swarming with delight, so he may count his hives in greater numbers, and it seems to him the only way of increasing his bees, the experienced bee-keeper regards natural swarming as a nuisance, and especially if his colonies run up into the hundreds, scattered in several apiaries. It requires a good deal of watchfulness and much hard labor on his part during the swarming season, as excessive swarming may not only cause a loss of bees, but a greater loss in the honey crop on account of the weakened forces to gather it.

Swarming is, however, no longer feared as it used to be, and although it may always be a hindrance in keeping a large number of apiaries, and in the production of the greatest amount of honey, it can be regulated and controlled so that bee-keeping is profitable. Many methods are employed for swarm prevention.

One of the chief requisites is a large hive so manipulated that the bees may be kept at work contented. A cramped brood-nest, in which the egg-laying room of the queen is restricted, the otherwise crowded condition, and the lack of storing room and improper ventilation of the hive, are all factors to produce the "swarming fever." By looking after these details properly, it can be held in check to a marked degree.

Ventilation can be given by increasing the size of the entrance, simply placing a small stone or piece of wood under the front of the hive after it has been raised up by inserting the hive-tool into the entrance and lifting the hive. This will also give the bees a better passage-way in and out during the working season. Shading the hive will also aid in cooling it.

Swarming can be delayed in many instances, and often entirely discouraged, by destroying the queen-cells every 9 or 10 days, but this must be done carefully, and not a single cell overlooked. These precautions only help to allay the swarming desire. Once they are determined, it is a difficult matter to prevent it. The only proper remedy then is to satisfy their desires, not by allowing them to swarm according to their will, but by doing it for them.

The most successful plan is "the brushed or shaken swarm," and one that can be modified to suit local and particular conditions. Briefly, colonies that are found preparing to swarm, and with queen-cells in the hives, are treated by shaking nearly all the bees off their combs as they are removed from the hive and placed in any empty hive, which is then set in a new place. They are given a caged queen, or the remaining bees allowed to rear a queen from several cells left on a comb that has not been shaken, and the inmates destroyed by the jar. There should be enough bees to properly protect and care for the brood, especially during cool temperature. The combs removed are replaced in the old hive by frames filled with full sheets of comb foundation. The change has the same effect upon the bees as if they had swarmed naturally. They behave exactly like a swarm, and no colony of bees works with greater vim and vigor.

This treatment results in an increase in the number of colonies, but if this is not desired, the number can easily be reduced after the swarming season by reuniting as many colonies as desired. It is not necessary to treat each colony in the apiary as described. Only those that are actually preparing to swarm receive this treatment, and the number is small if the proper precautions for keeping the colonies comfortable and contented are taken. Some seasons the desire to swarm is greater than in others, and consequently more difficult to control.

If swarming can be kept in check until the honey-flow begins here in Texas, all swarming preparations will come to an end. That a honey-flow will put a quietus to the swarming desires of the bees is recognized among Texas bee-keepers. Instead of continuing swarming preparations they divert all their activities toward gathering and storing honey, and no more swarming need be feared as a general rule.

This is entirely unlike the conditions in the North and East, where the opening of the honey-flow brings with it wholesale swarming that is difficult to control.

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A Long Distance Moving Experience

On the morning of March 19, we started for Llano county with 5 loads of bees and bee-keepers' supplies, a distance of about 65 miles. We had, on the day before, brought the bees from an out-apiary 14 miles away. They were to be moved to a small ranch we had bought in Llano county for a bee-ranch. We had made the usual preparations for giving the bees ventilation by putting screens over the tops of the hives and entrances. As the spring was late, and the bees had but little brood for this time of the year, we were congratulating ourselves on the way we had the bees fixed for their long journey over rather rough roads, and on common farm wagons with bolster springs.

On the morning of the above date we were up on time, and had all the teams harnessed and ready for the move. The boys were furnished with lighted smokers, veils, etc., and cautioned not to drive close to each other. I did not expect any accident from escaping bees, as I had closed and fixed the hives bee-tight myself, since I have had considerable experience in moving bees by wagon.

All went well until near noon, when we knew from the odor coming from the bees in the hives, as well as their actions, that they were getting too hot. The boys were instructed to drive into the shade as soon as possible, and as we stopped near a running creek of water for noon, we supplied all hands with buckets and tin cups with which to sprinkle and water the bees. The mercury had risen from 60 degrees in the morning to 96 degrees in the shade by this time. We would certainly have lost all the strongest colonies had it not been for the free use of water and the faithful helpers who applied it.

The next day was cloudy and most favorable for moving bees. All went well until the third day, when we encountered a severe change of weather. We were within 5 miles of our destination when an old-fashioned Texas norther struck us at 4 o'clock in the morning. We were soon up and dressed, and had a large camp fire burning, for with the norther came rain which turned into sleet later. Now, the shoe was on the other foot, as the saying goes, and we had to do what we could to protect the bees and the brood from chilling.

Our destination was reached while it was still cold and sleeting, and it continued the rest of that night and the next day. It gave us a good opportunity to open the hives after unloading without the bees flying and mixing. As soon as the sun came out during the next day, the bees came out in full force, gathering honey from the "agherita," or "wild currant," which was then at its best. Not a single colony was lost on this long move, and at this date the colonies are all booming, so that I am expecting to get a good honey crop from them, as they are favorably located. L. B. Smith.

Rescue, Tex.

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When to Put On Supers

The bee-keeper should devote much time to the study of his locality, the source of the honey-flows, and when they are to be expected, so that the supers may be put on the hives at the proper time. To put them on long before they are needed gives too much room for the welfare of the colonies; besides, the bees may destroy the foundation in them by gnawing it down. But to leave the supers off until they are actually needed often results in the colonies becoming crowded and getting the desire to swarm.

According to the old rule, the proper time to give supers was when the bees were adding bits of white wax to the upper part of the comb along the top-bars, but this is too late unless swarms are desired, as this indicates a crowded condition in the brood-chamber. It is better to put them on a little before the real honey-flow begins than even a day later.

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Why Don't Bees Work in Supers?

This is a question that is often asked. The inexperienced bee-keeper expects that at a certain time all colonies, no matter what the circumstances or conditions may be, will begin to store honey in the supers. A colony may be so weak that it has all it can do to take care of the brood-chamber. Or it may be strong enough, but there may be room in the brood-chamber to be filled before storing elsewhere, for the bees prefer to work as near the brood-nest as possible. Many colonies hesitate to enter the supers even during the honey-flow, and with the brood-chamber filled full, and it becomes necessary to entice them by giving them partly-built combs of honey in the supers. After they have once begun work in them, other conditions being favorable, they will continue to do so as long as the honey-flow lasts.

The most practical way of getting such colonies started in the super, is to exchange their super for one from a colony that has already begun work nicely. It is not necessary to free these supers entirely of bees, but it must be certain that the queens are not in them when taken to other colonies. It is quite safe, however, to drive most of the bees out of the supers with smoke when the covers are lifted off, and the queen will leave the supers for the brood-chamber below. Then the supers, combs, bees and all are simply exchanged and set on the colonies that refused to work in theirs before. The bees brought with the supers in which they were already at work will be additional aid in continuing the work in them.

Often the reason why bees do not enter the supers is because there is no honey for them to store. Even if there is an abundance of bloom, there may be no nectar in it.

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Meeting of the Texas Bee-Keepers' Association

The annual meeting of the Texas Bee-Keepers' Association will be held July 30, 31, and Aug 1 at College Station, Tex., as usual in connection with the meeting of the Texas Farmers' Congress, of which the Bee-Keepers' Association is an affiliated section. Preparations were completed several weeks ago for taking care of a large crowd, and the outlook for a large gathering is very promising. There has been prepared a variety on every program that will be rendered by each section and by the Congress sessions, so that all who have the pleasure of being able to attend will find entertainment worth while.

To those who are not acquainted with the work of the Texas Farmers' Congress, a trip to see the great things that this educational institution is doing for the agricultural interests of the Lone Star State would be worth while, especially since cheap railroad excursions prevail at that time. It is hoped that all of the many bee-keepers in this great State, who can do so, will be at the meeting to have "one big, old time," such as bee-keepers only know how to have.

[We are sorry that this notice reached us too late for the July number.—Ed.]

CONTRIBUTED ARTICLES~

Amount of Honey Used by a Colony in a Year

BY ADRIAN GETAZ.

(Continued from July Number.)

However, the known relations between the production of energy and the consumption or combustion of carbon show that this amount is not considerable. It must vary to some extent with the temperature.

Usually when the bees secrete wax in any quantity, they form a cluster. Some honey, more or less, sometimes none, according to the temperature, must be consumed to keep up the proper heat in the cluster. That should be included, for it would not have occurred in the absence of wax secretion.

Upon the whole, I think a ratio of about 4 pounds of honey to 1 of wax is the most correct of all those offered. That is a good ways from the 8 or 10 pounds of our text-books.

Wax Produced.

We come now to a much more difficult point to ascertain. That is the actual quantity of wax produced by a colony during the season.

A writer, I think it was F. Greiner, said that the comb of a section of honey, foundation, capping and all is one ounce. Some others have put it as far down as half an ounce. I can not find the quotations just now. Suppose a working season of 100 days, and a yield of 50 pounds of comb, the average during the total time would be ¾ or ½ ounce daily.

If extracted honey is produced, only the cappings would be needed, but, on the other hand, the yield would be greater. It must be remembered, too, that owing to their extra thickness the cappings constitute a larger portion of the combs than one would at first think.

Assuming a production of 1500 young bees a day, it is easy to calculate that the necessary brood cappings would be the equivalent of both sides of 2 sections. Add to this the amount used for bits of comb here and there in the brood-nest, all the bur and brace combs, queen-cells, etc., and in case the colony has been shaken, ½ or 2 pounds for the reconstruction of the brood-nest, and the conclusion almost forces itself on the mind that the amount of wax produced every day can not be less than 2 ounces, and is probably more. That means a daily consumption of honey of at least another half pound.

When the weather is such that new wax can not be produced, the bees will use old wax to a certain extent, otherwise judging by the cappings and other scraps that they throw away, they will use only new wax.

Brood-Rearing.

How much honey is consumed by the bees to rear a pound of brood, or, rather, how much does the brood consume, including what may be lost during the preliminary partial digestion or preparation by the nurse bees, is the hardest nut to crack of all.

I can truthfully say that "I don't know." The only experiment in that line that I can find is one made by the Hon. R. L. Taylor, and is reported in the Bee-Keepers' Review for August, 1896. The comparison was made between artificial and natural swarms. These last, during the following 3 or 4 weeks, produced considerably more brood than the others. The principle is simply this: Suppose 2 colonies of equal force furnish at the end of the experiment, the first 8 pounds of brood and 4 pounds of honey, and the second 10 pounds of brood and no honey. It is evident that it took 4 pounds of honey to produce 2 pounds of brood.

Second Field Meet of Eastern Illlinois Bee-Keepers, Held at St. Anne, Ill., July 22, 1912. (See page 232.)

From left to right, top row:—Geo. Martin, I. E. Pyles, C. E. Woodington, Walter Sorensen, C. F. Timmon G. F. Gamble, John Soucie, N. A. Timmon, Thos. Mayo, J. B. Burillette, A. L. Kildow. Center row, left to right:—Bert Sherill, H. S. Duby, Mrs. D. Lefeve, Mrs. Olive Duby, Mr. and Mrs. J. H. Roberts. Bottom row:—Edw. Manny, Walter Duby, Miss Lily Lefeve, Master Jim Shrontz

Taking into account the difference in strength of the colonies, and several other minor points, Taylor comes to the conclusion that one pound of brood consumes 2 pounds of honey to arrive at maturity.

In my opinion, that estimate must be too high. In the first place, the assumption was made that both sets of colonies gathered the same amount of honey in proportion to their strength. I don't see it that way. The colonies having the most brood must have gathered less than the others, from the fact that a larger proportion of their bees were occupied at home instead of going to the field. If these experiments are repeated, it should be with fed bees, or in some way that the actual consumption of honey can be ascertained.

Then the amount seems to me to be extravagant on its face. The larval food, at least for the workers, is half honey and half pollen and water. Hence, 2 pounds of honey would indicate a total of 4 pounds of food per pound of fully grown brood. The larvæ live, or, rather, are fed for 5 days. The first 2 days can be set aside, as these larvæ are then very small, and consume very little; that is, approximately.

The bulk of the food is consumed during the last 3 days, which would give 1⅓ pounds of food for one of brood, as the final weight. But a larva 3 days old is very small, and one of 4 days considerably less than one of 5. The growth in the 5th day is by far the largest. Upon the whole, the average size of the larva can not be more than ⅓ of the final size. The consequence is, that the brood must consume daily 4 times its own weight if Taylor's figures are correct; or, at least, 3 times if we correct for the loss that may occur in the stomachs of the nurse-bees, the neglect of the first 2 days' food, and a few other minor points.

This seems impossible. Nearly all the nitrogenous (flesh forming) part of the food is utilized. There is but little waste; the cast-off skins, the cocoons, and a slight amount voided by the bees after they emerge, that is all. Nothing is needed to keep up the warmth since the bees maintain the hive at the proper temperature, though there may be some doubt on this point. All the losses are water and carbon dioxide from the honey consumed to furnish the *energy* necessary to the growth of the body.

Suppose a daily production of 1500 young bees. Taylor's figures would give a daily consumption of ⅔ of a pound of honey for that purpose. I think we can cut this down to ½ pound.

Feeding Back.

Little information can be obtained from colonies which were fed back honey. The conditions for successful feeding back are:

1st. Very warm weather.

2d. Strong colonies.

3d. The brood-nest contracted and filled up completely at the beginning with brood and honey.

4th. Rapid feeding. The colonies that do not take large amounts of food must be discarded at once. As much as 15 pounds has been taken in one day.

As to the results, 4 pounds have been obtained from 5 of honey fed. But that is a very rare exception, and I think the late Mr. Hutchinson is the only one whoever obtained it. One pound out of 2, or 2 from 3, are generally obtained under good management. Rapid feeding means on an average of at least 8 pounds a day. This would give for the honey consumed by the bees something like 3 pounds daily. We have now to compare this with the condition of a colony under normal circumstances.

The *back-fed* colony is made strong, and is in most cases probably larger than an average one. On the other hand, the warm weather and the contraction of the brood-nest will decrease the daily consumption. But the production of wax is considerable. When 6, 8, or even more, sections are completed and capped every day, the extra wax required is very considerable. Furthermore, under the stimulus of a bountiful feeding and warm weather, the bees produce sometimes even more wax than they can use, and plaster it over the feeders, the sections and other available places. A deduction of what honey may be consumed for that extra production could be made, but it is unnecessary, and could be but an approximation at the best.

Conclusions.

We may take for the working season 100 days from the time the bees are taken out of the cellar to the end of the flow. The objection may be raised that during the first 2 or 3 weeks very little if any wax is produced, and the amount of brood startad is not considerable. That's true.

But judging by the rapidity with which the stores carried over disappear, even when nectar is coming in, a considerable amount of honey must be consumed in order to keep up the required temperature inside of the hive at that time of the year. I may add also, that the estimate of 1500 young bees per day is exceeded when the brood-rearing is at its best.

Concerning the half pound of honey consumed to keep up the temperature, keep the bees alive, etc., it seems to me too small. Divide half a pound by 20,000 or 30,000 bees, and the amount allotted to each one will look ridiculously inadequate.

The half pound for wax production, and that for brood-rearing, are rather too small than too large; so we may set the consumption of honey for the 100 days at something over 1½ pounds every day, say 160 or 170 pounds in all. After the flow comes 50 or 60 days during which very little work is done. The daily consumption must fall considerably, perhaps as low as ½ pound. We may guess at 30 or 35 pounds for that period. But it is a guess sure enough.

Then comes the winter to which we may allow 15 pounds of honey actually consumed; this may be too much in some cases and too little in others. Taking it all in all, the estimation of 200 pounds a year is rather below than above the mark for a good colony in ordinary circumstances.

Knoxville, Tenn.

Closing the Season

BY G. M. DOOLITTLE.

A correspondent writes that he has had considerable trouble in removing the section-honey at the close of the season, either from robber-bees getting the start of him when he is taking the honey from the hives, or from not getting the sections free of bees, or from both, and requests that I give the readers of the American Bee Journal some advice along that line.

There is no season of the year, unless it be in early spring, when robber-bees are likely to be so troublesome as immediately after the honey harvest. Up to this time the bees have been active in the field, bringing in nectar to a more or less extent every day. They are now kept from work, and are on the lookout for any sweets that may be exposed; hence, are very readily taught to become active robbers. This makes the removal of the honey from the different colonies in the bee-yard, at this period, a big undertaking for the novice. Often the veteran is caught unawares.

When once, by mismanagement, a lot of robbers have been educated to a new vocation, the apiarist has something quite unpleasant on hand. Success lies in *not educating*. Many are very careless at this point. Carelessly leaving the honey-room door open, leaving a frame or two containing honey outside of a hive, thinking "I will be back in a moment," a crack or crevice here and there about the supers, etc., where bees can get a start on stolen sweets, caused an unpleasantness about the apiary for some time to come, and especially at this time of the year, when we wish to work at taking off honey.

If thoroughness is used, so that no bees can get a load of stolen sweets, the bees will quiet down into contentment soon after nectar-gathering ceases. While waiting two or three days for this contentment to come on, prepare everything for the removal of the supers of section honey, so the same can be secure from robber-bees the moment they are off the hives. As a matter of course, there will be a greater or less number of bees that will adhere to the supers, unless the Porter bee-escapes are used, and even with them some bees will remain, unless we leave the supers on these escapes for several days. Therefore, it is always best to make some provision for the escape of the bees that are carried in with the supers, when they are taken to the honey-room.

As bees, in leaving these supers, will go to the window of the honey-room, and, when there, will always run toward the top of the window, there is little trouble with them. On the outside of the window frame nail a strip of wire-cloth, such as is used on windows and doors to keep flies out, allowing this wire cloth to extend a foot above the top of the window, keeping it out and away from the outside of the building, immediately above the center of the window ⅜ of an inch, and you will have a bee-escape at all times when the top sash of the window is lowered, by means of which the bees will go out into the open air, and from there home; while any robbers which may be attracted by the smell of the honey, will not think of going so far above the spot where the smell comes out, to find the only opening through which they could reach this coveted honey.

At least, after using such an arrangement for more than 30 years, I have never known of a single bee finding its way into the honey-room through it. No room in which honey is stored should be considered finished until it has such an escape on the outside of each window.

Having things in readiness for the removal of the supers, at your leisure raise the same on your bee-escape boards, preferably in the early morning, when these raised supers may be taken to the honey-room the next morning. If you have a spring wheelbarrow, you can take several of these supers to the honey-room at once. I consider such a wheelbarrow one of the most valuable assets about the apiary. By having what is known as a "robber-cloth" to cover the supers as soon as they are removed from the hive to the wheelbarrow, this wheelbarrow load can be protected from robber-bees sufficiently to allow work at removing the honey all day long, if necessary.

If you do not use bee-escape boards for the removal of section honey at the end of the season, procure two or more of the robber-cloths, using one for the wheelbarrow, and the other for driving the bees out of the supers. To best do this, with a clamp fasten one side of this cloth to the further side of the super, after the cover has been removed, allowing it to lie flat over the open tops of the sections. When ready, with your smoker in trim so it will give a large volume of smoke, raise the edge of the robber-cloth next to you, blowing in two or three good puffs of smoke, when you will "flop" the cloth up and down by a quick up and down motion of the hand while holding it, blowing in more smoke with every two or three flops, and almost before you know it, 99 out of every 100 bees will be driven from the sections to the brood-combs below, the bees often stampeding out at the entrance of the hive.

Now drop the smoker and cloth, and lift the supers from the hive to the wheelbarrow "instanter," before the bees "flock" back, which they will do almost as rapidly as they stampeded the other way. While I generally use the bee-escape boards, yet where this robber-cloth-smoking process is used, I get less mutilation of the sealing to the sections if there is a little unsealed honey in a super, than I do with the escapes. With the escapes, the bees never leave the supers until they fill themselves with honey, and if there are no unsealed cells containing honey, they are always sure to bite through the cappings of the sealed honey to get what they want before passing down through the escapes. But with the smoke and the robber-cloth-flopping plan, they are stampeded below before they even think of taking a particle of honey.

However, if you are too slow in getting off the supers, so that the bees will flock back again, the cappings of the cells will be torn far worse than they will where the escapes are used. Of course, the few bees which still remain in the supers, after using the smoke plan, will fill themselves with honey after the supers have reached the honey-room; but as there are so few left, it must be a more completely finished super than is generally found, not to give enough unsealed honey to fill these few bees. And I have never known bees to open sealed cells for honey as long as there is honey in unsealed cells to supply their needs for this filling.

Is 90 Percent of So-Called European Foul Brood Starved Brood?

BY A. L. KILDOW,
Illinois State Apiarian Inspector.

I noticed in a recent number of the American Bee Journal that Mr. McEvoy states that 90 percent of the so-called European foul brood is starved brood. I must take exception to that statement unless he qualifies it and says "for Canada." If he does that, I have nothing to say; but if it is meant for the whole country, I object so far as the State of Illinois is concerned.

I have been doing inspection work for three seasons, and I think I am fairly well posted as to bee-diseases, and am satisfied that I can tell one kind from the other at a glance. In the article Mr. McEvoy gives his diagnosis of European foul brood, and it is practically the same as mine. I have examined hundreds of colonies this season, and I find a very small amount of starved brood and a little pickled brood, but it is no trouble for me to tell the difference between starved brood and European foul brood. If Mr. McEvoy would just reverse his statement and say that 10 percent was starved brood and 90 percent European foul brood, I would not have a word to say, for that is the way we have found it in Illinois.

If an inexperienced man had made that statement instead of Mr. McEvoy, I would say that he was not posted, but just guessed at it.

Putnam, Ill.

Starved Brood and European Foul Brood in Canada

BY F. E. MILLEN,

Apiary Inspector for the Ottawa Valley.

I have read your correspondence on European foul brood, pickled and starved brood, by Mr. McEvoy and others. I think Mr. McEvoy makes statements that are extreme, and which cannot be verified. I refer to two:

First, "That 90 percent of the so-called European foul brood is starved brood."

Second, "That by keeping pure Italian bees, and giving them proper management, none of these kinds of dead brood will be found among them."

At one time it may have been true that 90 percent of the so-called European foul brood was starved brood, but Mr. McEvoy forgets that time and European foul brood do not stand still, and I feel sure that 95 percent of the so-called European foul brood in Ontario today is the genuine article.

Starved brood never possesses that sickening odor, neither does it have that greasy appearance so common to foul brood larvæ. Then, if the weather has been wet and cold, so that food has become scarce, one would look closer and make a more careful diagnosis than if the weather had been fine. Again, starved brood is cleaned out more quickly by the bees than is the dead brood from European foul brood. From the virulent nature of the disease, we can almost always find it in every colony in the yard, when once present, whereas starved brood would not be found in colonies with lots of stores. Then, too, the scales of European foul brood are smaller than those of starved brood; in fact, starved brood is scarcely ever left in the cells until it becomes a scale, as the bees begin cleaning it out the first fine day; whereas, with the European foul brood they sometimes leave the hive rather than clean out the diseased larvæ.

The reason why European foul brood sometimes disappears in a heavy honey-flow is that the nurse-bees do not touch any of the old stores, but feed the fresh honey, which is not so liable to be contaminated. Next season, if the old stores are fed, the disease makes its reappearance. This is why so many fail to cure the disease when they re-queen, but do not remove stores.

Mr. McEvoy says that by keeping pure Italians, with proper management, *none* of these kinds of dead brood will be present. This is true of starved brood only, as by proper management the black bees can also be saved from getting starved brood; but if the spores of the disease of European foul brood are present, the Italians will surely show the disease, and, if not treated, in some cases will die out. It is true that by careful and continuous selection Italians will stand up better against the disease, but that they are not immune is plainly evident. I could take him to yards that were re-queened as long as 4 years ago, and the bees are all pure Italians yet, and this season European foul brood is present.

While it is misleading to the beginner to state that Italians are *immune*, they should be told that though European foul brood may break out, if they will *constantly re-queen*, and that only from their best colonies and new blood, and keep none but the most vigorous, young Italian queens in their colonies, then they have done all they can. By careful watching they need never be wiped out by European foul brood, though a little of the disease will sometimes show up.

Mr. McEvoy's plan of removing diseased colonies to remote places to be treated is hardly practicable these days, as there are bees almost everywhere. It is not right or fair to other bee-keepers to have diseased bees pass through their district. All diseased colonies should be treated where they are as early as possible, and fed if necessary to preserve their existence.

Leonard, Ont.

Samples of Dead Brood

BY WM. M'EVOY.

When I wrote that 90 percent of the so-called European foul brood was nothing but starved brood, I had in mind the samples that came through the mail to me. I found starved brood in 9 samples out of 10 that were sent to me.

When I wrote that article it was to show the general condition or proportion of the different kinds of dead brood found, and not to dispute the findings of the great experts such as Messrs. N. E. France, W. D. Wright, N. D. West, Charles Stewart, A. L. Kildow, I. E. Pyles, or any of the inspectors. I forgot to mention Dr. C. C. Miller, a man that I greatly respect, I was not disputing anything he wrote.

Pickled brood should be called *starved brood*. It is about 30 years since I found the cause of the bees letting some of their brood starve. When on my rounds inspecting apiaries I always pointed out the difference between *well fed, half fed,* and *starved brood in the same comb.* I found more or less in every locality every spring, between fruit bloom and clover.

Woodburn, Ont.

Starved and Dead Brood

BY I. E. PYLES,

Assistant State Inspector of Illinois.

On page 148 of the American Bee Journal, Mr. McEvoy writes: "Please give it out that I say that 90 percent of the so-called European foul brood is starved brood." It makes no difference about the percent, whether it is 10 or 90. Of course, it could be verified, if true, by the department at Washington. But we all agree as to the description of European foul brood; such being the case, how can any one make a mistake and call starved brood European foul brood? Of course, I can readily understand how people who have had no experience will call any dead brood foul brood, but that those having experience should make a mistake of this kind is beyond my comprehension.

In starved brood the larvæ never turn yellow, and invariably the adult bees suck the juices away and throw out the skin of the larva, which is always white. In pickled brood the juice is never sucked out, because it is always sour. In starved brood there is scarcely any honey, and none unsealed in the hive, while in European foul brood it makes no difference as to the amount of honey.

I have read in convention reports that Mr. McEvoy said, in talking of pickled brood, that in most cases it was caused by starvation, and it is just possible that is what he meant instead of European foul brood, at least that is what I prefer to think he meant.

Putnam, Ill.

The Winter's Lesson

BY J. E. CRANE.

A letter from a prominent bee-keeper in Michigan tells of the loss of half or two-thirds of the bees of that State, and doubtless this is true to a considerable extent through the North, also in a large number of yards in this State (Vermont). But what often seems a misfortune may prove a blessing. The loss of colonies may mean the "survival of the fittest," or those best adapted to their environment. It gives the bee-keeper plenty of opportunity for an intelligent investigation of the whole subject.

As I go around in the springtime in the sharp, bracing air of the season, with a few early flowers just open, and look over the bees, how my enthusiasm rises, and the blood tingles to my finger tips as I discover some new fact, or learn how to better care for the tiny little creatures.

Even the finding of an occasional swarm that has died has its lesson, if I am only able to interpret aright the conditions that have caused the loss.

Doubtless the severity of the past winter has had much to do with these lessons, but I doubt if it is the primary cause. I have observed for many years that bees winter much better after a season of an abundant crop of honey, and poorly after a season when the flowers have yielded but little nectar, whether the winter is severe or otherwise.

It would seem extravagant to say that poor honey seasons are the cause of all our winter losses, and yet I have for many years been of the opinion that they were the main cause. The fact that many colonies wear themselves out, or, at least, weaken their vitality very rapidly searching for food when no honey, or, but little, is to be found, while others rear less brood during August and September than when honey is abundant in the fields or in the hives, and the quality of it often in such seasons inferior, has strengthened my belief that the cause of our losses often lies back of the winter, in the previous season.

With several yards of bees I have abundant proof, as it seems to me, that my conclusions are correct. I find this spring that our winter losses in a number of yards were almost in exact inverse proportion to the amount of honey gathered by each yard during last year. In one yard where a very fair crop of honey was gathered, our loss in wintering has not been any larger than usual—one colony out of 60—while two others were broken up from queenlessness. However, the colonies in this yard are not so strong as a year ago, showing that the severe weather had its effect, but not enough to be of any serious account. In other yards, where the yield of honey last year was the lightest, I find the percentage of loss the largest, amounting to about 35 percent. Where there was some honey, or a better yield, the loss has been lighter. The winter loss has been in almost exact proportion to the dearth of honey last season, and consequent loss of vitality, and number of bees and strength of colonies.

When the season is very poor bees swarm less, there is a very much larger proportion of old queens carried through, queens which are liable to fail —and many such do fail—causing the loss of the colony. A large number of our losses come from this cause.

What can be done to remedy the trouble? In poor seasons we neglect our bees, as they are not likely to swarm, and as little surplus is to be taken. This is a great mistake. Unless honey is sufficiently abundant the latter part of the season to keep them breeding freely, they should be fed sugar syrup early enough to give them an abundance of food, so they may rear a good supply of bees to withstand the cold.

Even with all our care the colonies are likely to be weaker than in years of plenty. Where bees are wintered out-of-doors they should be crowded onto a less number of combs so that a small colony can keep up the necessary warmth. If wintered in cellars, they should be kept a little warmer than in other years, or the weakest colonies carefully sorted and given the warmest place in the cellar. It would be well also to replace old queens with young queens of the season to prevent superseding of such queens during the winter and early spring.

Middlebury, Vt.

How Best Queen-Cells Can be Secured

BY DR. C. C. MILLER.

It is easy for the bee-keeper who runs for honey to understand that he should rear queens from his best stock, but in nine cases out of ten, he has an idea that the matter is too complicated for him to undertake. He reads about artificial cells and grafting into them larvæ from the best stock, but says, "That's not for me," or if he does undertake it his first trial is a failure, and he concludes the best thing for him to do is to depend upon swarm-cells. These will be good cells, yes, excellent, but they are likely to be from those colonies most given to swarming, and these are not the colonies that will pile up the most honey.

APIARY OF E. LEMAIRE, BASCO, ILL.

If he would only persevere he might succeed, and that success in getting queens from his best stock would repay him well for all his trouble. Yet it is not necessary to use artificial cells. The plan I use for rearing queens for myself requires nothing of the kind. And it gives as good queens as can be reared. I do not say it is the best plan for those who rear queens on a large scale to sell. But for the honey-producer who wishes to rear his own queens I have no hesitation in recommending it. I have reared hundreds of queens by what are considered the latest and most approved plans for queen-breeders; and so I think I am competent to judge, and I feel very sure that this simple plan is the best for me as a honey-producer. I will give it as briefly as possible.

Into an empty brood-frame, at a distance of 2 or 3 inches from each end, fasten a starter of foundation about 2 inches wide at the top, and coming down to a point within an inch or two of the bottom-bar. Put it in the hive containing your best queen. To avoid having it filled with drone-comb, take out of the hive, either for a few days or permanently, all but two frames of brood, and put your empty frame between these two. In a week or so you will find this frame half filled with beautiful virgin comb such as bees delight to use for queen-cells. It will contain young brood with an outer margin of eggs. Trim away with a sharp knife all the outer edge of comb which contains eggs, except, perhaps, a very few eggs next to the youngest brood. This, you will see, is very simple. Any bee-keeper can do it the first time trying, and it is all that is necessary to take the place of preparing artificial cells.

Now put this "queen-cell stuff," if I may thus call the prepared frame, into the middle of a very strong colony from which the queen has been removed. The bees will do the rest, and you will have as good cells as you can possibly have with any kind of artificial cells. You may think the bees will start "wild cells" on their own comb. They won't; at least never any to amount to anything, and, of course, you needn't use those. The soft, new comb with abundant room at the edge, for cells, is so much more to their taste that it has a practical monopoly of all the cells started. In about 10 days the sealed cells are ready to be cut out and used wherever desired.

Marengo, Ill.

[The front-page picture illustrates Dr. Miller's method described above. During the preparation and rearing of the queen-cells, in the picture, the weather was cool and rainy, and most unfavorable to queen-rearing. However, there were 39 cells built and sealed on both sides of this comb, 33 of which show in the half-tone, some of them very slightly. We have no doubt that 50 or more would be reared on such a comb in favorable circumstances.—EDITOR.]

How to Secure a Good Crop of Honey

BY A. C. ALLEN.

This essay took first prize at the Wisconsin State Bee-Keepers' Association meeting in February, 1912.

When this subject is mentioned, there naturally passes before our vision fragrant orchards of apple bloom, through which spring zephyrs play and robins sing. Pastures and meadows, white and pink with clover blossoms, and later on the buckwheat, golden-rod, hearts-ease, etc., with sunshine and showers, just at the right time to make it possible for the busy bee to secure the winter supply of sweets for herself and man.

This is pleasant to dwell upon, and while a few apiarists have land of their own on which to grow some of these nectar-yielding plants, in view of the fact that it is impossible for but a small percentage of us to have any control of this feature of the question, this will be devoted to that of which we can have almost absolute control, viz: of having a means of obtaining the nectar that will surely come stalking across the plains, some few days each season, which is strong colonies.

Working upon the rule that in "union there is strength," we must have colonies of say 80,000 bees and upwards, and the first requisite to this, is to have all colonies headed with a young and prolific queen when the bees go into winter quarters; this is imperative because of the uncertainty of introducing queens in the spring.

Second, the bees must have a good quality of winter stores and plenty; but right here let me say that for ease of work and best results, the hives do not need to contain as much stores as we formerly allowed them; an unecessary amount makes carrying into and out of the cellar a hard job. Formerly I wanted 30 pounds for 8-frame colonies, and 40 for the 10-frame size; but now I prefer 20 for the former and 25 or 30 for the latter.

What I am going to tell you now is not theory but from actual practice: Formerly I took the bees from the cellar quite late—they were left in about as long as they remained decently quiet. But I find of recent years that they seem to get into rather better shape to breed up rapidly if taken from the cellar so they can take several cleansing flights a few days before pollen is ready for them to gather.

As soon as possible after removal from the cellar the hives are wrapped with Niagara sheathing, which is light in color, and the toughest paper I know of, and will allow of removal several times each season, and will last 2 or 3 years. This should be of one piece laid on top of the hive and folded down on all sides, as it then forms a wrapping through which no heat can escape. A cord tied around near the bottom holds it in place, and over all is slipped a telescopic cover and the entrances made very small.

After they have had one or more good flights each colony is examined. Some may need contracting, stores may need to be equalized somewhat, unclean bottom-boards reversed so all will have sweet, clean homes to begin the new year. In all cases we should be sure that plenty of honey is close to where the brood-nest is forming, for cold spells will come, and we want none to starve by having to move over for feed.

With colonies thus protected, we may have no fears of chilled brood from any Wisconsin weather during the last half of March and on; therefore, we want breeding to commence at once. To start this with energy, I have found nothing equal to a comb of warm syrup put up close to the colony; this is done from one to three times, once each week, according to the season until pollen comes, when it is warm enough to put on the bottom feeders. For this I use small troughs containing a little excelsior placed and used the same as the Alexander feeder.

As soon as pollen begins to come in freely, very thin, warm sugar syrup, flavored with dark honey or washings from cappings, is fed each evening for a month, after which they are fed twice a week with thicker syrup, and about one or two quarts at a feed, being careful to discontinue this at the proper time, so none of it will find its way into the surplus when the honey-flow begins. A thick feed may be given towards the last if the weather is warm, and the bees can gather their own water. This is quite an object when one makes the feed at home and hauls it several miles to an out-yard.

A close watch is kept on the process of brood-rearing, and sealed honey is removed when it appears to be in the queen's way of egg-laying. When May first comes, or a little later if all is going well, I want no sealed honey in my hives. If a comb is found quite well filled at this time, it is removed from the hive, and if but little honey is found it is uncapped. Brood-rearing is going on at a very rapid pace, and we want nothing to obstruct the work. When working this plan the queens will lay right up to the sealed honey at tops and ends of the combs, and then the they jump to the next one, which, if it is entirely empty, is filled completely with eggs. This should be an eye-opener to any one, for we can at once see the folly of allowing so much honey to be in the hive.

In past years we have heard it urged time and again by the "fathers," that a big lot of honey in the hive made the bees feel "rich," and so we worked upon that plan, but could never get the results that we now do by this improved plan, and I am not alone in this. You see our bees are receiving just about enough for their daily needs, which stimulates the same as a slow honey-flow. When a good percentage of the colonies have seven combs of brood, we begin equalizing, and when all but the two outer combs are full of brood, I put full ones in their places, and these empty ones are moved toward the center, and soon every comb is full from top to bottom and from end to end. This will be at or a little before fruit-bloom, when the hive is raised up and a second story placed underneath and left a week or 10 days. Do not leave it there any longer than this, for the queens are slow to move down, and it is apt to induce the swarming impulse. At the end of 10 days reverse the hives, and in case of 8-frame bodies the queen is given the run of both stories until the clover flow starts, but with 10-frame hives she is confined to the lower story, for one seldom finds a queen that will feel crowded on 10 combs containing no honey.

If increase is desired, the strongest colonies may be divided soon after fruit-bloom, and one-half of them supplied with queens from the South, unless you prefer to rear your own.

Drone-comb is allowed in none but breeding colonies, which is quite an item in increasing the honey crop.

When the honey-flow starts, any of the most approved plans of swarm prevention may be practiced, but I prefer the Allen plan of which I told you two years ago.

For the man who does not wish to practice spring feeding, all other plans in this article will apply except that he must feed heavily in the fall.

Put this plan into practice my friends, and you will have more honey to sell with less labor and expense, than if you increased the number of your colonies and apiaries.

Portage, Wis.

"Because Of" or "in Spite Of?"

BY ARTHUR C. MILLER.

The most difficult thing to do when making experiments with bees, either of management or of apparatus, is to determine whether the results are *because of* what was done or *in spite of* the same. We are seized with the idea which, the longer it is cherished the better it appears. It is put into concrete form and applied. Excellent returns are secured and they are at once attributed to the application of the idea, but it is an even chance that the results were in spite of it.

As the inspectors go from apiary to apiary, this fact is daily brought home to them, and the wider one's travels, the more convincing the evidence. Two bee-keepers, in the same general environment, will use radically opposite systems and obtain equal results, and each will affirm with vehemence, that his results were wholly due to the method pursued by him.

The upward-ventilation-absorbent-cushion man will denounce most heartily the sealed-cover system, and the believer in the latter has no possible use for the advice of the man who does not believe in it. And both of them may be wrong. Possibly the results secured are in spite of their system, or are in no wise connected with it.

It may not be that we, as a class, deceive ourselves any more than the members of any other craft, but most certain it is that a vast number of us do not take the pains and trouble that we should to prove that the results secured, when using a particular piece of apparatus or following some set procedure, are due to that or are in spite of it.

Wherefore, we are constantly filling the columns of the bee-papers with long dissertations on the immense value of some plan or implement, and not only do we thereby use up costly space, but, perchance, if the writer be popular, have some influence or possess the faculty of convincing diction, a lot of the craft will follow the leader to their own cost. Not but what they may secure excellent results, but if the originator or exploiter had not been self-deceived, he would never have led them to make expensive, or, at least, troublesome changes which had no more to do with the result than to lead the bee-keeper to a little closer observation and care.

We are all experimenters with animals about which our knowledge is as yet really only fragmentary. As experimenters we should (or must), for our own sakes, as well as for those who follow, take the same pains which other experimenters in animal behavior take, and always accompany every experiment with an equal number of colonies treated as has been our previous custom, or leave them undisturbed. This procedure is called a "control;" that is, "a check," something to compare with or measure by.

The greatest bee-keepers of the past,

and of the present, universally follow Mr. Langstroth's fundamental rule to "keep your colonies strong." They differ only in their idea of "strong," but none of them have any use for "small" or "reduced" colonies at any time. That rule should be constantly in the mind of every honey-producer, and, furthermore, he should have the first and last words blazed in letters of fire, KEEP STRONG. When that rule is observed to the letter, and when the maintained strength is secured by natural, simple means, the value of particular apparatus or method suddenly disappears.

Select your apparatus to suit your *convenience*, and that only. The "strong" colonies will get the honey and store it for you if any is to be secured, regardless of all the "theories" on which your appliances are built. And the "strong" colony will winter "in spite of" all the ideas you have on the subject. Follow Langstroth's great rule, "KEEP your colonies STRONG," and you will soon be asking yourself the question, is it "Because of" or "In Spite of" any scheme under test that the results are as they are? Then you will begin to progress.

Providence, R. I.

Hints for Apiary Work

BY F. GREINER.

On account of my not producing very much extracted honey, I have not thought best to invest in capping-melters. I let the cappings drain in the roomy uncapping-trough, then wash them in water, using the sweet mixture either for feeding back or, if handier, for making vinegar; finally I melt them in the solar wax-extractor. The wax thus obtained is of the best quality, and no honey is lost or injured by overheating.

Very dry sections cannot be folded without a considerable amount of breakage; it has, therefore, been advised to dampen them by pouring water from a fine spout through the grooves of the sections before removing from the crates. Thus, a whole thousand are dampened, and have to be made up at one time, which is not always desirable; besides, after being thus treated, it would not be best to fill the section-holders with these damp sections at once. A little time has to be given to let them become dry. The wetting of sections in this wholesale manner has other bad effects. They lose their smoothness wherever water touches them, and often they do not fold perfectly square. The tension of the V-groove, diagonally opposed to the dovetailed corner, is not balanced by an equal tension by that last-named corner, and so the folded section stands diamond-shaped. Even after becoming dry again, the trouble, we find, has not disappeared. Diamond-shaped sections give us the least trouble with our wide-frame supers; with T-supers, when we are using such, they are simply horrible. Luckily, there is no need of moistening sections by pouring water on them. We keep ours in a basement and they seldom become so dry but that they may be folded without breakage. In a very dry time it may be necessary to wrap up a crate in a wet blanket for a day. I generally cover the whole with an oilcloth besides, to prevent evaporation. So treated, not one section need break in folding; the smooth finish is preserved; the grain of the timber in the grooves has not been raised to produce the diamond shape, and we may fold as few, or as many at a time, as we wish.

A hinged cover to a smoker has the disadvantage of being glued or stuck up with creosote, and if, after using it hard, it is left without first raising the cover slightly, it is sometimes, yes, very often, next to impossible to pry it loose without doing some damage. It is true, by heating the smoker, by holding the cover part over a burning newspaper, shavings or something of that sort, a process which melts the creosote, the implement may be opened and filled for lighting; but a better smoker is made which has a telescoping cover, and this works perfectly.

To prevent the bees from liberating a queen too quickly by eating out the candy, the latter is sometimes fortified by tacking a piece of pasteboard over it. This is usually effective, and too much so in some instances. I have found queens still in the cage after a week. It is my belief that queens are often injured by long confinement. We should eliminate imprisoning our queens entirely, and the one practical method is by rearing one's own queens and then uniting the nucleus containing the laying queen with the colony to be re-queened. Then there is a proper time for re-queening, and this time is *not* after the honey season is entirely over, although we see it thus advised. There can be no objections raised against replacing old or undesirable queens with *good*, ripe queen-cells from superior stock at this time, but it is not best to introduce queens at so late a date if it can be avoided. To keep the queens confined over 3 or 4 days is poor policy. Direct introduction is the best.

The most favorable time for queen introduction is when bees are very anxious to rear brood. We know from experience that bees accept a queen early in the spring, even when there is no honey to be had in the field, while late in the season, even with a fall flow, we have to be very cautious, and have to confine her majesty in some sort of cage for a time before liberating.

It has never appeared to me fair to sell comb honey by the case, on account of great variations in the net weight of honey that a case may contain, although each may contain the same number of boxes. I do not deny the desirability of such a course, nor do I deny that there may not be any more difference in section honey than there is in "eggs" that are sold the world over by the piece. Still, I have not yet met the dealer who will buy my honey in that way. I sell by weight, which is the only just way, fair to all parties concerned. My practice has been to balance each empty crate or case on the scales, then proceed to fill it and mark the net weight only on one corner. Some years I have tried to put an even number of pounds in each case. This year I thought it would save me a little extra work to crate the honey just as it came, and I marked the exact net weight to the *half*-pound on each. This proved a loss of five dollars to me, for when I received my check for the 150 cases of white honey, I found that the half-pounds had been thrown out. By changing a few heavier sections for lighter ones, or *vice versa*, the difference of a half-pound can be easily made, and I shall resort to my old practice in the future, viz: have an even number of pounds in my honey-cases.

Recently I melted a lot of propolis, or scrapings, accumulations from cleaning section-honey and wide frames. I obtained a number of pounds of very nice wax out of that lot, which, separated from the propolis, was dipped and poured off. It paid well for the trouble. Who wants to buy the propolis?

Naples, N. Y.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Prevention of Swarming—Giving Bees Room Under the Brood-Chamber

1. Having a colony of bees not very strong, and a shallow super with only foundation, I propose to place this super under the present brood-chamber, put the queen down in it, with an excluder to keep her there; three weeks before the fall flow, which begins here, say about Sept. 1, I will reverse the position of the brood-chamber and super, putting the super on top, the queen below, and the excluder between. (This reversing could be done at any previous time should the super become in any sense crowded.) Queen-cells to be taken care of properly.

I expect, by these manipulations, to get the combs drawn in the super; to promote brood-rearing with the additional help of stimulative feeding, and incidentally to prevent swarming should there be any chance of that happening. Is this a practical plan?

2. I have a rousing big colony which has not given any signs of swarming, but has the brood-chamber filled with brood, a section super being on top. I place under the brood chamber another hive-body with fully-drawn combs, and no excluder. How will this affect work in the super? Will it probably influence any to swarm? NEW JERSEY.

ANSWERS.—1. Yes; it is a variation of a plan given to prevent swarming in "Fifty Years Among the Bees." I may mention a chance for trouble in one respect. It may happen, especially if the colony be weak, that the bees will desert the queen, leaving her alone below the excluder. I don't know whether this has any tendency to make the bees swarm out. So it is a good plan to have at least a little brood in the lower story to hold both bees and queen.

2. The colony being very strong, there may be no immediate difference apparent in super-work, the colony being strong enough to do good work above and below. But it is a pretty safe guess that the bees

will put a lot of honey into those drawn combs below the brood. At least my bees did. Then the brood-nest may continue above and the honey below. But that is not at all likely to continue for any length of time. The brood-nest is likely to work its way down into the lower story. Brood may continue to occupy both stories. More likely the lower story will become filled with brood, and the upper story become wholly, or, in part, filled with honey. Sometimes the central combs in each story will be filled with brood and the outer combs with honey.

Unless queen-cells are well under way when drawn combs are put under, there will likely be no inclination to swarm. Even if queen-cells are started, if they are cut out they may not be started again.

Swarms Refusing to Stay in a Hive

Please tell me how to keep the bees of a swarm from swarming out again. I lost several swarms this summer by their swarming out. They were put in new hives that I bought 2 years ago. IOWA.

Answer.—Years ago it was more or less the practice to wash out the hives with this or that under the notion that certain odors made it attractive to the swarm put in it. Nowadays nothing is wanted but a clean hive. Your hives were, no doubt, all right. But it's a pretty safe guess that the bees were uncomfortable for all that. Either they were too warm or had too little air. Likely both. When you hive a swarm see that it has abundant ventilation. Give it as large an entrance as you can. If practicable it is a good plan to raise the hive an inch or so from the bottom-board by putting blocks under the corners. Shove the cover forward so as to make an opening of half an inch, or an inch, at the back end. After 2 or 3 days you can lessen the ventilation if you think best. The hive should be in a shady, airy place. If you cannot give shade in any other way, cut an armful of long grass, put it on the hive, lay 2 or 3 sticks of firewood on it to keep it from blowing way. Some make a practice of giving a frame of brood to the swarm. The bees think that it is such a good start toward housekeeping that they are unwilling to leave it without great provocation.

Bad Losses Partly Caused by Spring Dwindling

If you can tell what ails the bees this spring, please do so. I had 160 colonies, fall count. April 10 I had lost only 10 colonies, then they commenced to dwindle. The spring was very late, but I found only 2 colonies short of stores. As soon as the weather got warm they left the hives, and those that did not died in May. There was but little brood, and not enough bees to cover that little. I have now 30 colonies left, and one-half of them are so weak that if they live through they will do well. Last season was a poor honey season; no early flow, and none after Aug. 15; no late brood, and all old bees at the commencement of winter.

The hives had lots of honey in them, but we got but little in the supers. I melted 400 pounds of honey taken from the hives where the bees had died or left. I found none without honey except about 15 strong colonies; those I fed, and they are doing well now. Every one is in the same fix. One man with 30 colonies has one left; and another with 1000 has one-half left. The general loss is about 50 percent.

The bee-keepers' association met here the first of the month, and reported the loss as State wide, and I see by the Bee Journal that Wisconsin suffered, too, and California is also hit hard. Utah seems to have escaped. I think we will have to quit bee-keeping and try something not so uncertain. COLORADO.

Answer.—I don't know enough to say what the trouble was. It seems that the winter and spring losses were quite general, more general than at first supposed. A note from the office of the American Bee Journal accompanying your letter says: "Same conditions with some bees here. One man has 30 left of 160, spring count. Bad case of spring dwindling, we called it." That "30 left of 160" was worse than your loss, for the 160 was spring count, and your 160 was fall count. In my own locality it was a good deal worse. Aside from my own bees, I think I have heard of nothing less than 90 percent loss, and perhaps in most cases the loss was entire. Although my own loss was not so bad as that, it was the worst I have had in many a year. I put 114 colonies in the cellar—or had them put in—had 83 taken out, and in June had 64 left. That made the total loss nearly 45 percent. I try to excuse myself a little with the thought that my bees didn't have a fair chance. In the fall there was sickness practically in the family, ending with death, which kept me from giving the bees the attention they ought to have had. When they were taken out in the spring I was sick abed with the worst illness of 30 years. But I don't know how much better it would have been if I had had all the chance in the world. I suppose you have given a pretty good answer to your own question when you say your bees dwindled. It was a case of spring dwindling, and a pretty bad case, too. That leaves still the question why there should be such an unusual spring dwindling. And that's the hard question to answer. The winter was an unusually hard one. In this locality at least I never knew such a killing one. Hardy roses and other shrubs were killed outright, root and branch. I never before knew grass to be so badly killed. The severe winter was no doubt hard on the bees that were wintered outdoors. And it was also hard on bees wintered in cellars which are none too warm in ordinary winters. But it ought not to be bad in cellars like mine with a furnace, where the problem is to keep the cellar cool enough.

Bad Spring Dwindling—30 Colonies Left of 160.

The principal trouble, I think, both with you and with me, dates farther back. The season, last year, was bad. Breeding stopped early, and this spring the proportion of very old bees was so large that they died off rapidly at the time when most needed. That left, in many cases, brood with not sufficient bees to cover it, and when that happens there are no bees to go a-field, the bees dwindle, become discouraged, and sometimes desert their hives, leaving a good stock of brood and stores—everything apparently necessary for their prosperity. In your case, no doubt, the severe winter aggravated the case. You may take comfort in thinking that the same thing may not occur again in the next 50 years.

Italianizing Swarms—Making Increase

1. Page 335 of "Forty Years Among the Bees," headed, "Italianizing with Natural Swarming," is given a plan as follows: Call Italian colony A the strongest, B, C and D the next. When A swarms, hive the swarm and set it on the old stand, putting A in place of B, and B on a new stand, and so on. At the last you say, if you have only 5 or 6 colonies, the whole lot may be thus Italianized. Now, is it not a fact that the new swarms will only be Italians, and the old colonies will be the same as before the operation?

2. I have 3 colonies, and will call them 1, 2 and 3. No. 1 has 7 frames, and the comb is built so it cannot be removed; No. 2 is of the same stock, and has straight combs which can be removed; No. 3 is composed of black bees and is weak. I would like to increase from my 2 best colonies, and as I cannot find anything in my books to fit my case, how will this plan work: Remove the frames only in No. 2, then take half the brood from No. 2 and place it in a new hive, and set the new hive in place of No. 1, setting No. 1 on a new stand. Shall I leave the queen in the old colony, or give her to the new one? The idea of putting the new colony in place of No. 1 is to catch the flying force, as they would not be apt to keep any old bees from No. 1. Will the queenless half rear a queen? If this is not a good plan, what would you advise? MISSOURI.

Answers.—1. Yes, the old colonies remain the same. It might have been more clearly written, but if you will notice the context you will see that the swarms are referred to, for immediately preceding it is said "each of your swarms will have for its queen a daughter of an Italian queen.

2. Yes your plan will work. Better leave the queen on the old stand, for if she is in the hive that is put on the stand of No. 1, there is some danger that she may be attacked by the returning fielders of No. 1. Be on the lookout 10 or more days after making the change, for it is possible that a swarm may issue with the first virgin that emerges.

Can You Destroy European Foul Brood and Save the Combs?

Tell us how to destroy European foul brood without destroying a lot of nice, straight combs. ILLINOIS.

Answer.—When I discovered European foul brood in my apiary, I melted up hundreds of beautiful worker-combs. If I had it to do over again I would try to save them. I have been blamed for encouraging anything of the kind, because in the hands of careless bee-keepers there is danger that the disease may be spread through the combs that are saved. But you'll promise to be very careful, won't you, if I tell you how I would do—how I have done? The first thing is to have the colony strong. Foul brood is not a great strengthener of colonies, and if it has proceeded to any great extent you will need to strengthen the colony by giving brood or young bees, or both, from healthy colonies, or by uniting diseased colonies. But, remember, *the colony must be strong.* The Alexander treatment requires the removal of the queen, and then 20 days later the giving of a ripe queen-cell or a virgin just hatched of best Italian stock. The bees do the rest. I *think* I have had just as good success without leaving the colony so long without a laying queen. So instead of waiting 20 days, give the colony a cell or a virgin just as soon as it will accept it after the removal of the queen.

Sometimes you may find only a single bad cell, or perhaps 8 or 10. In that case it may not be necessary to do anything. A week or two later you may find that the bees have cleaned out all bad brood and left nothing but healthy brood in the hive. But you may find the case worse than it was, although not yet a very bad case. If the queen is vigorous, and the colony appears prosperous, cage the queen and leave her in the hive. After a certain period let the queen out of the cage, and if your bees do as mine have done the disease will have disappeared in most cases. I say after a certain period. I think a week is long enough, but perhaps 10 days is better. You notice that I also say, "in most cases." Because in more cases than I like the disease has reappeared. But so it did in some cases when I brushed the bees upon foundation and melted the combs.

Queens Laying Drone-Eggs—Are they Old Queens?

What kind of a queen-bee is it that lays part drone and part worker eggs in worker-cells; is she an old queen, young, or not fertilized? I bought 50 queens, this spring, from one of the most popular queen-breeders in the South, and 3 of them lay part drone and part worker eggs in worker-cells, and one more laid all drone-eggs in worker-cells. I know what "A B C of Bee Culture" says, and I am sure it is right, but wish to see this answered in the American Bee Journal.

CALIFORNIA.

ANSWER.—An old, played-out queen may begin laying occasionally a drone-egg in a worker-cell, and gradually increase until she lays nothing but drone-eggs. But this is by no means always the case with old queens. Occasionally a young queen begins laying without being fertilized, and, of course, will lay only drone-eggs. Sometimes a young queen lays part drone-eggs in worker-cells, either because imperfectly fertilized or on account of some functional disability. Sometimes a young queen lays drone-eggs for a while, and then lays worker-eggs all right.

You do not say what kind of queens you bought, but buying as many as 50 at a time it is practically certain that you bought them as untested queens. That would rule out the chance of their being old queens, always supposing you bought from an honest man. An untested queen is generally shipped as soon as convenient after she begins to lay, and all that the breeder is supposed to know about her is that she is reared from a good mother, that she is physically perfect so far as appearances go, and that she has begun to lay. The purchaser takes his chances on whether she is purely mated or whether the eggs she lays in worker-cells will all produce worker-bees, unless, indeed, they are sold as warranted queens. Yet it is probably not often that so many as 4 out of 50 turn out bad.

Queen at the Entrance—What Was the Matter?

July 11, early in the morning, I went to my bee-yard. It was cloudy, and a few bees were flying out from hive No. 5. On the alighting-board I found a nice queen with one solitary bee beside her. She appeared weak, so I took her up and put her in at the entrance. The bees gathered around, but did not ball her. I saw them feeding her; they seemed glad to have her. Pretty soon she moved around, and in five minutes she went into the hive. She was a young queen. Bees are doing well; plenty of bees and honey. What was the matter? In all my readings, I never read of a case like this.

INDIANA.

ANSWER.—I don't know what the trouble was It is among the possibilities that the colony swarmed the day before, and the queen, for some reason, was not able to go with the swarm, but remained over night outside. But in that case there ought to have been a number of bees with her. It is barely possible that the queen may have been from some other hive, and although received kindly at first was badly used after she got into the hive. Both those guesses are poor ones, but they're the best I have in stock.

REPORTS AND EXPERIENCES

Prospects Good for Next Year

There was considerable loss here from the severe cold winter, as some colonies perished from lack of food, while others could not reach the stores on account of a continuous cold spell.

There is not much white clover, as it was nearly all killed by last summer's drouth, but it is coming up nicely, and promises well for next year. Basswood bloomed more plentifully than it has for many years, so the bees stored considerable honey from that source. When basswood was in bloom there was considerable swarming.

The fall pasture may be good, as there is plenty of all kinds of weeds growing.

MAX ZAHNER, SR.

Lenexa, Kans., July 10.

Prospects in Western Illinois

On account of winter-killing of white clover, and a light rainfall in some localities, there is a scant flow of nectar. Many colonies are short of stores, and must be fed to carry them over to later bloom. The early, later bloom will be light unless we should have heavy rains. Bees must be looked after during this critical period

Basco, Ill., June 20. WM. FINDLEY.

Black Bees the Hardier Race

Some 20 years ago I lived here and had some 200 movable-frame hives, mostly with Italian bees, selling about 4000 pounds of honey one year. I left the bees here, and they became scattered throughout the community. Since then I have had a few bees in Polk, Atascosa and Duval counties, Tex

This spring I am back here again, and have gathered up about 20 of my old hives, which are now filled with black bees. I bred and sold a good many Italian queens and some bees. A few pure-blood swarms absconded and took trees as domiciles. A few of my neighbors kept Italians then, but now I am unable to find even a cross-bred colony in all this, my old territory. Does this not almost prove that the blacks are the hardier race?

Almost exactly two-thirds of this season's new swarms have absconded I got a swarm from a tree that was cut this week, and have heard of 3 more being found and cut; all blacks. Where are the Italians?

Spurger, Tex., June 27. GEO. MOTT.

Good Season in Ohio

This is the best season that this locality has seen for years, honey has been coming in like a flood. Clover has yielded an immense amount of nectar, and the basswood flow is very heavy. There is also a good prospect for a flow from sweet clover.

The honey-flow has been so heavy that we have to extract from the brood-chambers to let the queens have some place for their eggs. I never saw the brood-nests so honey-clogged before.

Bees are doing the best this summer that I ever saw, and I think that in spite of last winter's heavy loss, the majority of bee-keepers will have more bees this fall than they did last. J. C. MOSGROVE.

Medina, Ohio, July 8.

California Prospect Not Encouraging

The honey crop in this county is almost a complete failure this season. Everything looked promising in March for a good flow of honey, but owing to lack of sufficient rain to soak the ground to a lasting depth, we have had only enough to call it a surface moisture, and a few warm days dry this. The sage, on which we depend, withers very fast under such conditions. We have had about 20 days in which the bees gathered honey this season, while other seasons we would have at least 60 days.

W. F. HACKMANN.

Salinas City, Calif., June 18.

Honey Crop Short in Switzerland

The season in Switzerland is very poor. Up to June we had nothing but deficiencies. Many swarms, owing to the enormous populations in the hives, but no honey. With the large Dadant hives, I have always succeeded in preventing swarming, but this year there is no way of succeeding in this

ULRICH GUBLER,
Editor of Bulletin D'Apiculture.

Belmont, Switzerland, June 10.

A Little Surplus Honey in Kansas

American foul brood has been rampant hereabouts. The farmer bee-keepers have lost about all; bee-moths killed them (?). The honey-crop is light here this year, white clover was killed out last year by dry, hot weather, but we will get some surplus.

J. F. VIGOR, M. D.

Pomona, Kan., June 20.

Good Reports from Ohio Valley

This section of the country is enjoying a very heavy honey-flow from white and sweet clover, both of which are abundant. Many colonies have already gathered more than 100 pounds Reports from Kentucky and Tennessee are equally flattering. We look for a honey harvest equal to 1906.

THE FRED W. MUTH CO.

Cincinnati, Ohio, June 19.

MR. J. W. STINE, OF SPERRY, IOWA, AND A PART OF HIS APIARY

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

NUTMEG ITALIAN QUEENS, leather color, after June 1, $1.00. A. W. Yates, Hartford, Ct.

FOR SALE—20 strong colonies of Italian bees, equipped for extracting, at a bargain. B. Walker, 6002 28th St., Cicero, Ill.

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GOLDEN Italian Queens, Nuclei, and Full Colonies. See price-list in May number, page 131. Isaac F. Tillinghast, Factoryville, Pa.

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FOR SALE—Three-banded Italian Queens bred for honey, gentleness, and prolificness. One, $1.00; 6 for $5.00, Wm. S. Barnett, 7A4t Barnett, Va.

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SUPPLIES.

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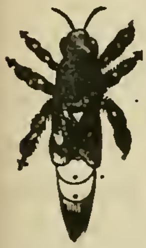

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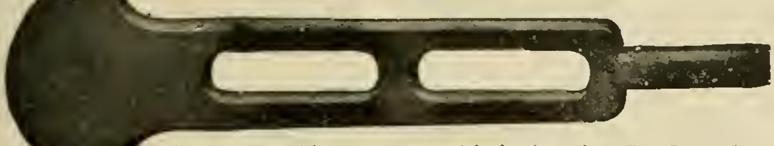

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Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $1.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens — 1-frame, $2 50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

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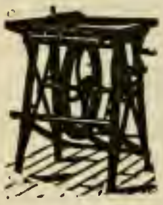

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Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

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HONEY AND BEESWAX

CHICAGO, July 15.—Some of the yield of 1912 has appeared on the market. The A No 1 grade, or what is usually spoken of as well-filled sections of white honey, has brought 18c per lb.; No. 1 has sold at 17c. All receipts have been taken readily up to this time. The quality of the honey is better than any that has appeared on the market since 1908, and we are looking forward to a steady market of much larger volume than we have had for the past three years. Some extracted has also come and sold at from 9@10c per lb. for white, and 7@8c for the amber. Beeswax remains steady at from 30@32c per lb., according to color and cleanliness. R. A. BURNETT & CO.

KANSAS CITY, MO., July 15.—The new comb honey is arriving on the market. No. 1 white is selling at $3.50 per case of 24 sections. Last year's extracted is selling at 7@7½c for amber; 8@8½c for white. Beeswax at 25@28c a pound. C. C. CLEMONS PRODUCE CO

INDIANAPOLIS, July 15.—New extracted honey of finest quality is now moving and selling at 10½@12c per lb. in 5-gallon cans, according to quality. New comb honey not yet moving, and considerable old crop still on the market at sacrifice prices. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

CINCINNATI, July 15.—At this writing we have received several shipments of new comb honey However, owing to the heavy crop reported everywhere, also noting that several cities have unsold comb honey from last year, the demand is not up to our expectations by far. For this reason, conditions must be looked into, and a range of prices is necessary in order to open up the season and enliven the buyers.

The little comb honey that is moving we are selling at 13@16c a lb., and fancy extracted honey at 8½@10c a lb., according to quality and quantity purchased. Amber honey in barrels we are selling at from 6½@7½c a lb. The above are selling prices. For strictly choice, bright, yellow beeswax we are paying 28c a lb. in cash or 30c a lb. in trade. THE FRED W. MUTH CO.

SAN FRANCISCO, July 15.—Comb honey, 15@16c for fancy; No. 1, 14@15c; water-white extracted, 9@9½c; light amber, 8½9c; amber, 7½@8c; lower grades, 5@6c. Beeswax, 27@28c for nice, yellow wax, and 23@26c for darker grades.

Very little comb honey coming in, and is taken up as soon as it arrives. Extracted honey is very slow in arriving, and we do not look for very heavy shipments until next month The early hot spell in the month of June dried up the sage-bush, and can look for little honey from that source.
J. C. FROHLIGER.

BOSTON, July 16.—Fancy and No. 1 white comb honey, 17@18c per lb. White extracted, 10@11c. Beeswax, 30c. BLAKE,-LEE CO.

CINCINNATI, July 17.—There is still some old comb honey in the market, and with very little demand. New comb honey has not yet arrived, and price will be lower than last season, as there is a good crop in general. Water-white extracted honey in 60-pound cans is selling from 9@9½c, according to quantity. Light amber in barrels from 6½@7½c; in cans, from 8@8½c. Beeswax is selling at $33 per 100 pounds.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

DENVER, July 16.—Strictly new crop of comb honey brings $3.60 per case of 24 sections in a jobbing way. White extracted, 9c per lb; light amber, 8c; strained, 6¾@7½c. We pay 26c in cash and 28c in trade for clean, yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

SAN FRANCISCO, July 18.—Comb honey, 15@16c per lb. The market is very short, and quantities are limited. Water-white extracted, 8½@9c per lb.; light amber, 7½@8c per lb.; amber, 6½@7c per lb.; lower grades, 4½@6c. Beeswax, 26@30c for yellow; 24@26c for darker grades. J. C. FROHLIGER.

NEW YORK, July 18. There is no new crop of New York State or near-by comb honey on the market as yet, and we do not expect to have any until in about 10 days or 2 weeks. From reports we have so far received, it is evident that a good, fair crop of white clover has been gathered with probably a crop of basswood to follow if weather is favorable. There are no prices established as yet, and probably will not be for 2 weeks to come.

Extracted honey is in fair demand, even in spite of the fact that there will be none or very little white sage in California. We think there will be enough of white clover and basswood in the East and Middle West to offset the shortage of sage in California. No fixed values are established for the new crop of clover and basswood and others, but we should think that prices will rule about the same as last year, at least early in the season. Nothing can be said as yet as to the buckwheat crop, but we learned that quite large fields have been sown, and with favorable weather, see no reason why a good crop should not be produced. Beeswax is steady at from 30@31c. HILDRETH & SEGELKEN.

Special Delivery

During this month we shall double our usual efforts in points of delivery and service. Early indications not having been most favorable, it is possible many bee-keepers will not have laid in a sufficient stock of supplies, such as sections and foundation, for the clover and basswood crop this month. We are prepared to make up for this oversight by having a large stock of both sections and foundation on hand for instant delivery. We carry nothing but the Root make, which insures the best quality of everything. We sell at factory prices, thereby insuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to bee-keepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

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If you haven't made arrangements for the disposition of your honey and wax for this season, consult us. We buy both in large quantities, and can assure you of fair and courteous treatment, and a good price for your crop.

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To sell your crop to the best advantage it must be well put up in attractive style. We have shipping-cases that answer every requirement of looks and utility. Small producers who sell their crops locally will be interested in the cartons in which comb honey is put up to sell to the fancy customers at top-notch prices. We have honey-cans, too, in cases for those who produce extracted honey. In fact, there isn't anything we don't have that the bee-keeper needs, either to produce his crop or help to sell it.

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6th to 25th each one copy of "Langstroth on the Honey-Bee," or in case you have this we will substitute any other standard work on bees

Restrictions:—All pictures to be clear and of good print, and accompanied by at least a short description. We reserve the right to use any and all pictures sent in. No picture will be accepted which has already been used in publication.

Any size picture will do. Send in your pictures now, or take them now and send them in before the date mentioned above.

For every picture we use, even if it does NOT come in the prizes, we will give a premium of some sort

It is our aim to increase the value the American Bee Journal, and we must have good pictures and plenty of them. Remember, our magazine is a National bee-paper

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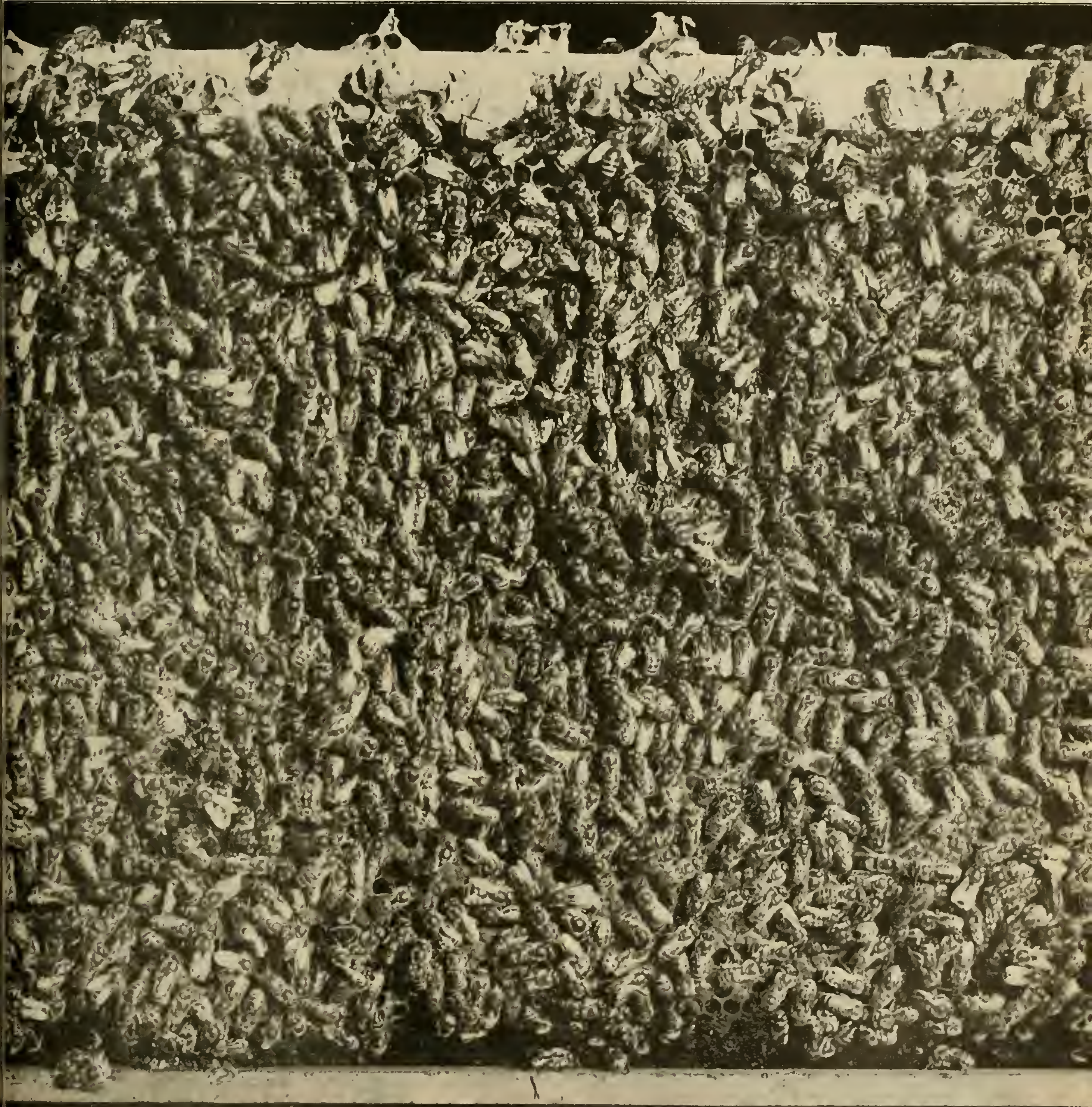
SEPTEMBER 1912



Quiet Italians on a Comb

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
George W. York & Company,
1st Nat'l Bank Bldg. Hamilton, Illinois

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by sending one dollar for its official organ, the Bee-Keepers' Review, from now to the end of 1913, and then after Sept. 1 send 50 cents for membership to one of the National Branches for membership to the end of 1913. This is in accordance with an action taken by the Board of Directors.

The Review now has a Board of three editors, thus insuring a more than "one man" paper. What the Review will have to say about the crop conditions this fall will be worth reading. Remember we have been getting crop reports from our members and subscribers, having sent a blank to each one. Send in your subscription of One Dollar now and reap all the benefits.

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The objects of this Association shall be to aid its members in the business of bee-keeping; to help in the sale of their honey and beeswax; and to promote the interests of bee-keepers in any other direction decided upon by the Board of Directors.

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Breed 3-band Italians Only

I am at last up with all contracts, and can fill orders by return mail—two to five dozen daily. Prices for remainder of season—

Untested, one for 75c; six, $4.00; twelve, $7.50. Tested, double these prices. The very best BREEDER, $10.00; Select Breeder, $5.00.

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I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.**, and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.**, near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

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Best No. 1 sections, 1000, $4.00; 2000, $7.60. Plain, 25c less. Best white pine Hives with supers, $1.25; 10-fr., $1.40. 24 lbs. 2-inch glass shipping-cases, 15c. Mother-wort seed, per package, 10c, postpaid. Catalog **free.**

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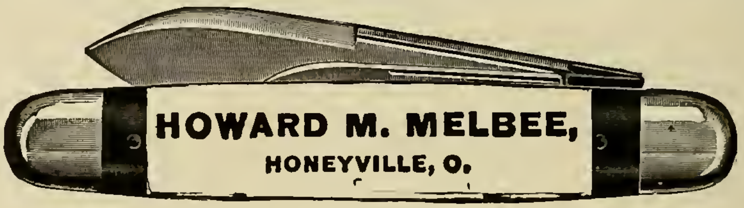

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

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American Bee Journal, Hamilton, Illinois.

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And then Pay you Highest Market Prices, or 2 cents additional in Trade

YOU CAN'T APPROACH THAT FOR PROFIT

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George W. York
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A Big Bargain—Must Sell

A friend of mine here has 10 acres, 3¼ acres under cultivation, bal. excellent celery land; large 3-room house with closet, bath-room, kitchen-sink, and built-in features in kitchen; woodshed and 20 h. p. boiler under it; greenhouse 16x20 feet, stocked; abundance of springs with best of water; 2 horse-power gasoline engine. 1½ miles from Sandpoint, and two other towns within 1½ miles. ¼ acre in strawberries, bal. in garden-truck. Good market for all that can be raised. Fine location for bees and poultry, also. Cost $4500 four months ago; will sacrifice $500 if sold at once. Terms, ¼ down, balance on or before 5 years. Write quick if you want a good thing. Address the undersigned, as I would like to help my friend who, on account of other business, will sacrifice as stated. I consider it a fine opportunity to get an established business and home.

Untested Italian Queens

The kind I have furnished for years—the rest of the season at these prices: 1 for 75c; 3 for $2.10; 6 for $4.00; or 12 for $7.50.

Some Special Offers

American Bee Journal one year ($1.00) with either "First Lessons in Bee-Keeping" (50c), or Doolittle's "Scientific Queen-Rearing" (50c), for only $1.00; or the American Bee Journal a year with **both** of the books mentioned—all postpaid for only $1.40.

If you prefer, you can have Gleanings in Bee Culture for a year instead of the American Bee Journal in the above special offer; or, if you want both books and both bee-papers, send $2.20.

Send for my **free** Circular of other special offers.

White Sweet Clover Seed

I have a quantity of White Sweet Clover Seed in Chicago, Ill., which I will sell at the following low prices so long as it lasts, all orders to be sent to me here at Sandpoint, Idaho:

5 lbs. for 80c; 10 lbs. for $1.50; 25 lbs. for $3.50; 50 lbs. for $6.50; or 100 lbs. for $12.00.

If wanted by freight, add 25c for cartage on your order.

While I make the handling of bee-literature a specialty, I also take subscriptions for general magazines. Write me what you would like in the way of bee-papers, bee-books, etc., and I will be glad to quote you some attractive prices. Address,

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
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Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

George W. York & Co.:—The two queens received of you some time ago are fine They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co, Kan, July 15. A. W. Swan.

George W. York & Co.:—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22 Chas. Mitchell

George W. York & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. Oglesby.

George W York & Co.:—The queen I received of you a few days ago came through O. K, and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. McColm.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50. or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

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We Make a Specialty of Friction Top and other Cans for Honey

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Factories at Chicago, Syracuse, Baltimore and Canonsburg, Pennsylvania. Write for prices.

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Sales Office: No. 72 West Adams Street, Chicago, Illinois.

If BEES could TALK

THEY WOULD SAY:

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It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

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HAMILTON, ILLS.

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by George W. York & Company, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., SEPTEMBER, 1912

Vol. LII---No. 9

EDITORIAL COMMENTS

Sugar in Europe

Bee-keepers in this country are inclined to regret that sugar is so cheap, as the tendency of low-priced sugar is to depress the price of honey. On the other side of the water the case is a little different. From reading the German bee-papers one gets the impression that if bee-culture is to flourish bee-keepers must be able to get sugar at a low price, and many pages have been occupied with discussing the matter of obtaining sugar free of duty. One proposition is to try to secure a law allowing denatured sugar to be imported without tariff. But it is difficult to put anything in sugar that will make it unfit for human consumption that will not at the same time make it objectionable to the bees. Another plan which is perhaps already successful in some places, is to allow sugar to the amount of 15 pounds per colony, without being denatured, to be obtained duty-free.

Bees Cleaning Out Combs

On page 205 of the American Bee Journal for July, Mr. Wilder tells about setting out a lot of extracting-combs for the bees to work on at a time when they are inclined to rob, and says the bees will not tear down the combs, but clean them up nicely. While no doubt this was true with Mr. Wilder, it is only right to warn the beginner that under certain conditions there is danger that the combs may be badly torn.

The probability is that the combs Mr. Wilder used were tough, old combs, and such combs may be safely left to the mercies of the bees. If they are new and tender it depends upon circumstances whether they may or may not be torn to pieces. Take a new comb at a time when bees are getting nothing from the field, and expose it to where the bees of 10 or more colonies have free access to it, and you may rely upon the bees to gnaw away a large part of the comb. At least that is the case in this locality.

There are two ways in which bees may be induced to clean the honey out of tender combs without tearing them. One is the B. Taylor plan. Have so many combs in proportion to the number of bees, that the bees will spread themselves over the combs without crowding in large numbers upon any one spot. They do not tear the combs unless much crowded and struggling with each other.

The other is the Miller plan. Pile up the supers of combs or of sections, and allow an entrance only large enough for a single bee to enter at a time. One such entrance may be allowed for every 2 or 3 supers. The bees may crowd at the entrance, but once inside there is no crowding, and hence no gnawing of the combs.

The Taylor plan is the better wherever the number of combs is sufficient. Perhaps one super for every 2 or 3 colonies may be considered safe. Spread the combs out as much as possible, so as to give free access to all. Possibly it is safer to use the Miller plan when there are as many as 3 colonies to a super.

Dr. Zander on Foul Brood

This office is in receipt of No. 1 of a series of handbooks of bee-knowledge by Prof. Dr. Enoch Zander, of the Royal Institute for Bee-Keeping at Erlangen, Germany. This number is devoted to foul brood and its treatment, and contains 30 pages with 8 illustrations, besides 4 fine plates representing bacilli and diseased combs. Under the head of foul brood he distinguishes 3 diseases:

1. Pickled brood (Sauerbrut).
2. European foul brood (Eaulbrut).
3. American foul brood (Brutpest).

The first two are called mild foul brood, and the third malignant. As the work was written two years ago, European foul brood is charged up to *Bacillus alvei*, together with *Striptococcus apis*. (We now know that according to the investigations of our Dr. White, the real miscreant is *Bacillus pluton*.)

In most respects the description of the diseases and their treatment is the same that we are familiar with, but European is called "stinking foul brood," and American "non-stinking." Surely, that does not describe the smells as they are known on this side, for an average case of European foul brood may be said to be pleasantly fragrant compared with a bad case of American. One might think there was a confusion of names, but that can hardly be, for it is the ropy kind that is called "non-stinking." Other German writers, at least some of them, agree with Dr. Zander in this. Is it possible that there is such a marked difference in odors there and here, or how can the matter be accounted for?

Dr. E. F. Phillips gives the answer to the puzzle. He says:

"I think that the confusion concerning the odor of the two types of disease originated with Dr. Burri. He examined his material entirely from laboratory samples, and in that way I judge did not get the full benefit of the odor of American foul-broody colonies. In his paper he specifies that in order to determine the odor, the dead larvæ should be removed on a small stick and held close to the nose. If this is tried European foul brood really develops a stronger odor in most cases. It is unfortunate, however, that any such name should be given to either disease, because it has only led to confusion. Our descriptions of American foul brood, the special emphasis which we have laid on the odor, has led a considerable number of Europeans to doubt whether our American foul brood is the same as the *Nichtstinkende* foul brood. I have found some European foul brood cases, however, that would do justice to old cheese when it came to odor. Of course, Zander was referring to some of the good German varieties of cheese when he makes this comparison."

Is Bordeaux Mixture Poisonous to Bees?

In the Agricultural Gazette, of New South Wales, quoted in Gleanings in Bee Culture for June 15, one apiarist sustains the harmlessness of spraying blossoms in regard to the bees. He reports that, in his experience, neither the Bordeaux mixture nor the subsequent arsenate of lead had any affect upon the bees, when they worked upon the bloom.

It may be opportune to state in this connection that the Bordeaux mixture, when unmixed with arsenates or other poisons, is of itself comparatively harmless. Those who have had occasion to use it know that its copper taste makes it extremely unpalatable. The least quantity of it upon fruit or blossom would render the juices unfit to use on account of its extreme bitterness. Besides, the sulphate of copper and lime, which enter its composition, can hardly be listed as poisonous by the side of the arsenic or other insect poisons usually employed. The Bordeaux mixture is of value only upon fungi, like the black-rot, but is harmless to insects unless they are literally soaked with it.

Concerning this question, we read the following in L'Apiculteur of Paris, June, 1912, over the signature of the renowned Dr. Carton:

> "Having a large area devoted to grapes in my garden, near my apiary, I made divers observations upon this matter. The addition of sugar to the sulphate solution increases its adherence to the leaves of the vines, so that the first rain storm may not dissolve and remove the mixture. Usually molasses is used in doses of 5 grams per liter of solution. I have added to the anti-cryptogamic solutions different sweet preparations, first molasses, then pure sugar. During the past two years I have even used honey in the copper solution, and have never seen any bees upon it."

On the other hand, there is no doubt that the arsenical preparations are injurious to all insects, bees included.

Feeding Sugar to Bees

It is possible that it will to some extent always seem, at least in some places, a matter of necessity to feed more or less sugar. Better to feed sugar than to let the bees starve, or to winter them on honey that will kill them. But, on some accounts, it would be better if no sugar were ever fed to bees. There is always danger of the suspicion that when sugar is fed it is with the intention of having it go into the surplus. However good sugar may be for bees as a food for winter, it cannot compare with honey as the proper food to be used for brood-rearing.

Neither is there the gain financially that some imagine in replacing honey with sugar. On paper it looks like a good thing. Say sugar can be bought at 5 cents a pound, and honey can be sold at 10 cents. A pound of sugar goes farther than a pound of honey, and if 20 pounds of honey be extracted from the brood-chamber and replaced with 20 pounds of sugar, isn't that a clear gain of one dollar per colony? But it is by no means certain that *with bees* a pound of sugar goes as far as a pound of honey. Certain it is that at all times *except in winter* the honey is better for them, as already suggested, and even in winter, honey of good quality may be better food. Besides, there is a considerable loss in feeding. So when these things are considered, and the time reckoned that is taken for extracting and feeding, the dollar per colony would be dearly earned.

Improvement in Bees

It is hardly necessary to say that the Editor does not accept responsibility for the opinions expressed in contributed articles.

In the current number Mr. A. F. Bonney, of Iowa, and Mr. Slayden, of England, hold opposite sides in an argument on the improvement of the bee. Mr. Bonney, who shows deep thinking and a thorough education, writes entertainingly against the possibility of improving the bees. Among other things he says that "industry is not a transmittable attribute, and that man is the only industrious animal alive." The Editor takes an opposite view. As Mr. Slayden argues, the fact that there are variations in the industry of the bee is evidence that there is possibility of improvement.

Cleaning off Top-Bars

Bees are likely to build more or less bur combs above top-bars. Some think this a good thing to encourage them more readily to pass into the super, while many prefer to have these bur combs scraped off when they become too plentiful. Some even think it pays to scrape the tops of the top-bars clean each year before the beginning of the honey harvest. Different tools are used for this purpose. Perhaps nothing is better than a common garden hoe with a fairly sharp blade. Stand at one end of the hive, put one foot against the top of the hive, and draw the hoe towards you until the upper surface of the top-bars is clean. To keep the bees out of the way, an assistant plays smoke over the top-bars. The editor of the South African Bee-Keepers' Journal commends the carbolic cloth to drive the bees down. This would at least have the advantage that one person could do the work, although possibly one alone might get along with the smoke.

Queen-Candy Without Honey

Nowadays one who ships queens by mail must have an inspector's certificate of inspection or else make affidavit before a notary that the honey used in mailing-cages is boiled. In the Bee-Keepers' Review it is suggested that it is not necessary to use honey at all in queen-candy. At least one queen-breeder is using candy that has no honey in it. "Syrup is made of granulated sugar, and then powdered sugar is added to make the dough. To prevent crystallizing he adds a little glycerine." It is simply a matter of using sugar-syrup instead of honey, and the addition of glycerine to the syrup gives to the syrup the quality of honey as to non-crystallization. Acid might do as well as glycerine.

Mineral Point, Lake Pend Oreille, Idaho

One of the Scenes Which Help Make Sandpoint Attractive—Lake Pen d'Oreille
(See Mr. York's article, page 276.)

Age of Swarming Bees

In these days of artificial increase there is danger that the behavior of a natural swarm may be forgotten. Editor Herrod, of the British Bee Journal, is giving a series of excellent talks under the heading, "Helpful Hints for Novices." In one of them he says that one of the things the novice should always remember is that "it is the old queen and the old bees which constitute a natural swarm." Bro. Herrod, if you will visit some cottager at the time when he is having a swarm, you may revise your opinion. If British bees deport themselves in the same way as American, you will find in the swarm old stagers with ragged wings, and from that down to those which have scarcely flown before. In the mother colony will also be found bees of all ages. It is well that it is so. If none but old bees were to go with the swarm, considerable readjustment would be needed to have work go on as it should in the new home. For "old bees" would hardly include those less than 16 days old, and at this age housework has ceased and bees are fielders. So these fielders would have to make a radical change and go back to the work of comb-building and brood-feeding.

In the Irish Bee Journal J. Tinsley says that the bees of a swarm "are all at the best age for work in the fields." Is it possible that in Ireland, as well as in England, only field-bees go with the swarm?

Bee-Keeping and Honey at the Fairs

In our last number we mentioned the large amount of premiums given by the Minnesota State Agricultral Society to bees and their products, the total aggregating $1062, divided into 158 awards. Other neighboring States are very far behind. Wisconsin leads with $500 in premiums, an increase of some $200 over last year, owing to a remonstrance made by the Wisconsin State Bee-Keepers' Association to the management of the State Fair, and to the untiring zeal of Mr. F. Wilcox, who is both superintendent of that department and a director in our National Association.

MR. F. WILCOX, SUPT. OF THE BEE AND HONEY EXHIBIT AT THE WISCONSIN STATE FAIR.

Illinois follows with $453 in premiums and 61 different awards under 21 different heads. As young a State as Oklahoma is awarding $311 to bee-keepers with 57 different awards. Kansas appears to have two State Fairs, one at Hutchinson, with J. J. Measer as superintendent of the honey exhibit, offering $290; the other Fair at Topeka, with J. P. Lucas at the head of the bee-department, offers $200 for bee-exhibits. Indiana gives $248, while Missouri extends a paltry sum of $148 to its bee-keepers. The Missouri State Bee-Keepers' Association has just taken notice of this, and proposes to ask for an increase. Missouri is reported in the census as having 40,000 bee-keepers, and can afford more money for premiums. As small a district as that of Greater St. John, N. B., gives $100 to bee-culture.

There is no reason why the bee-keepers' associations should not obtain recognition by an increase in the number and amount of premiums at Fairs. As Mr. Herrod, of England, says: "There is no better way to push the sale of our products than good Fair exhibits." Each State association should keep this in mind, and take Minnesota as a model.

Salt Fatal to Bees

There is a more or less general belief that it is important to give salt to bees. As proof of this it is pointed out that bees frequent objectionable places as drinking-places, and it is supposed that they do so because of the salt contained in the liquids found there. It has been claimed, however, that bees do not go to such places because of the salt, but because the liquid is warm. However that may be, it seems that great harm may be done by obliging bees to take salt at a time when they cannot fly to quench their thirst. In Bien. Centralblatt it is reported that two apiaries, one of them containing 38 colonies, were entirely wiped out, and analysis showed no disease present, but a notable quantity of salt; in one case as much a 1 percent in the syrup that had been given. The bees did not die upon the combs, but were mostly upon the bottom-board, as if they had left the cluster in a vain search for water.

Legal Honey in Australia

From the Australasian Bee-Keeper we learn that according to the pure-food law of New South Wales, honey may contain 26 percent of water as against 25 percent in this country. Here is the requirement:

> "Honey shall be nectar and saccharine exudation of plants, gathered, modified and stored in the comb by the honey-bee; it shall contain no more than 26 parts per centum of water, not less than 60 parts per centum of reducing sugars, and shall not yield more than three-fourths of one part per centum of ash. It shall not include the product of the bees fed wholly or in part on sugar or glucose, artificial sweetening substance, added coloring matter or other foreign substance."

It is also required that a copy of the pure-food law be posted conspicuously in the honey-house.

MISCELLANEOUS NEWS ITEMS

Death of Hon. R. L. Taylor

We are very sorry to have to inform the readers of the American Bee Journal of the death of Hon. R. L. Taylor, of Michigan, which occurred at Lapeer Aug. 17. He was almost 73 years old at the time of his death.

HON. R. L. TAYLOR.

R. L. Taylor was born at Almont, Mich., Nov. 3, 1839, being one of 14 children in the Taylor family. At the age of 19, the loss of his father threw the burden of the farm work on Mr. Taylor. Being of that sturdy and industrious Scotch stock, however, he was able to meet the situation, besides preparing himself for a college education, which he in time acquired by attending the Michigan University.

Hon. Taylor pursued a business vocation for some years, but finally drifted into law, and was admitted to the bar in 1869. He was at various times Recorder of Deeds, District Attorney, as well as State Representative, all of which positions he filled with the greatest degree of efficiency.

Like many others, Mr. Taylor grew gradually into the bee-business, beginning in 1878 with only two colonies of bees. Devoting the best of his ability to the bees, as he had always done to his other business, he soon grew to be a large bee-keeper, one of the largest in Michigan, producing tons of honey each season. He always maintained that the successful bee-keeper must be a specialist, and he proved his point by his own experience.

Being at different times President of the National Association, President of the Michigan Association, State Inspector of Apiaries for Michigan, as well as holding many other important offices in the large associations, he always fulfilled his duties towards the people he was serving, as well as to his own conscience, so ably that his reelection was no uncommon occurrence.

Although the bee-keeping world suf-

MEMBERS IN ATTENDANCE AT THE MISSOURI STATE MEETING, HELD AT MEXICO, MO., AUG. 1 AND 2.
From left to right—Mr. C. P. Dadant, J. F. Sandker, M. E. Darby, W. L. Kent, J. F. Diemer, Prof. Shobe, Irving Long, Mr. Thompson, Ed Gladish, Mr. Jones, J. W. Rouse, Col. W. D. Fronville, E. C. S. Miller, John Gamble, Noble Barnes, John Bachman. Front row—Mrs. N. Spencer, Miss Rena Rouse, Miss Gladys Robinson, Miss Bertie M. Rouse, Miss Ruth Rouse, Nathan Spencer, R. A. Holekamp.

fers a great loss in the death of one of its great teachers, yet we may console ourselves with the fact that Mr. Taylor has left a memorial to himself in the shape of numerous teachings which he has left in his writings and in his conversation. His valuable experience is not lost to the bee-keeping world.

◆

The Three Deadly Foods.—Under the above title, Dr. Carton, of Paris, a noted physician, treats of three products in common use in civilized countries, alcohol, meat and sugar. He declares them dangerous to public health.

On the first of these products, many people will agree, but with the second and third exceptions will be taken, However, much depends, in any case, upon the method of consumption and the amount of each product consumed. Meat is especially injurious when not sufficiently masticated. Sugar is held by Dr. Carton as responsible for the increasing number of cases of diabetes, as it appears that within the past 30 years the number of deaths from that disease has quadrupled. He holds that fruit sugar and honey are healthful and "living sugars," while the product manufactured with chemicals from beets or starch is "dead food." Carton holds, like some contemporaries, that more people die from overeating than starvation. His book is worth reading. It is published in French. (Maloine, Paris, 1 f. 25.)

◆

Missouri State Meeting.—The Missouri bee-keepers met at the home of their president, J. W. Rouse, in Mexico, on Aug. 1 and 2. Although the attendance was not large, important measures were taken and great interest was exhibited. Excellent and helpful remarks were made by J. W. Rouse, president; T. G. Wilson, Secretary of the State Board of Agriculture, Columbus, Mo.; C. P. Dadant, President Illinois State Association, Hamilton, Ill.; R. A. Holekamp, of St. Louis; M. E. Darby, of Springfield; W. L. Kent and E. C. S. Miller, of Mexico; E. B. Gladish, of Higginsville; Irving E. Long, Marceline; J. F. Sandker, of Woodlandville, and others.

It was decided to continue affiliation with the National. President Rouse explained that it was through a misunderstanding that he had reported, in the American Bee Journal, that the National Secretary had returned money remitted for memberships. On the contrary, the secretary, Mr. Tyrrell, had sent to the Missouri secretary, Mr. Diemer, a number of names of adherents which he had received from Missouri and other neighboring States having no representation, and had accompanied them with a remittance of 50 cents, as the State's share in each membership fee of $1.50.

In view of the fact that some members did not wish to become members of the National, it was decided to allow such persons as wished to do so to become members of the State Association only, by payment of 50 cents instead of $1.50.

Attention having been called to the small amount allowed for bees and honey in the State Fair list, a committee was appointed to interview the officers of the State Fair Board, and request them to increase the premiums to bees and honey.

Resolutions were passed requesting the Legislature to increase the appropriation for the State Inspector. Mr. Darby, the inspector, gave a general statement of his work, and explained that a number of deputies would have to be appointed in order to cover the territory for inspection at the proper season. He stated that there are some 40,000 bee-keepers in Missouri, and that a thorough inspection will require much labor.

In order to secure recognition, it was resolved to take steps to incorporate the State Association and ask the

State Legislature for an appropriation similar to that secured by the State Horticultural Association.

At the close of the meeting Mr. Darby delivered an address on the "Need of Education in Bee-Keeping Among the Farmers." Mr. Darby is in favor of teaching bee-culture in the country schools, and gave very convincing arguments on this subject.

Officers were elected as follows: J. W. Rouse, of Mexico, President; R. A. Holekamp, of St. Louis, Vice-president; J. F. Diemer, of Liberty, Secretary-Treasurer.

After a very enjoyable meeting, the members parted with many thanks to Mr. Rouse and his three pretty daughters for their hospitailty.

◆

Statistics.—According to the Yearbook of the Department of Agriculture for 1911, the import of beeswax into the United States for the year ending June 30, 1911, was 902,904 pounds, of a value of $270,112, or practically 30 cents a pound. The import of honey during the same time was 112,553 gallons at a cost ot $62,942, or an average of about 56 cents a gallon.

MR. YORK IN HIS NEWLY-ACQUIRED APIARY.—(See article on page 276.)

The exports during the same time were: beeswax 101,735 pounds at $31,404, or about 30 cents a pound (exported comb foundation was evidently not figured under this head); honey, no number of gallons marked, value $81,649. The export of honey slightly exceeded the import in value, while the imports of beeswax were nearly nine times the exports.

◆

Lime as a Help to Honey Crop.—Gleanings in Bee Culture gives as one reason why the clovers do not yield honey as formerly, that the soil has become acid, and the application of lime will consequently cure it of its clover-sickness, when the yield of honey may be as of old. In one respect, however, there is a sort of gain, for when the soil becomes a little too acid for red clover it may still do fairly for alsike. So the farmers in many places have replaced red clover with alsike, to the advantage of the bee-keeper.

◆

"Texas Bee-Keeping," by Louis H. Scholl.—This is a bulletin published as No. 24 of the Texas Department of Agriculture. It may be secured by application to the Commissioner of Agriculture at Austin, Tex. This is a real treatise, up to date in every respect (as might be expected from friend Scholl), containing 19 chapters, with a total of 144 pages, and profusely illustrated.

Mr. Scholl describes the different methods of the production of honey, but his preference is for bulk comb honey. He divides the State apiculturally into six areas, north, central, east, south, west and southwest. The most important of these areas to bee-culture he considers to be the southwest, where mesquite, huajilla and cat's-claw abound. It may not be out of place to remind our readers that Texas is by far the largest State in the Union, and this is evidenced in the introduction to the bulletin by a map of Texas, showing the outlines of 14 other States enclosed within its limits. There are many resources in so wide a region. It will be interesting to mention some items in the work.

Sixty-five pounds of surplus, of both comb and extracted honey per colony, is a fair yield for the average bee-keeper. That means, of course, bulk comb honey, one part extracted to two parts comb honey cut out of frames. Three-banded Italians are preferred.

"In most southwest Texas localities 100 colonies is considered near the proper number, while it has been found that better results have been obtained with only 50 colonies in a place, as localities farther northward are reached. It has also been determined that, in localities where 100 in one place will do well, they would do better if only 50 were kept in each of two separate apiaries several miles apart."

To prevent after-swarms, after a colony has swarmed, all queen-cells except one of the largest should be removed, which prevents immediate after-swarming, and to prevent it a little later it is customary to leave the old hive near its old stand, on which the swarm now is, for a week or 10 days, at the end of which time the old colony is moved to a new location. It may be a question whether that cutting out of cells is necessary. In the instructions so often given in the American Bee Journal, it is supposed that when the old hive is moved to a new location after the end of a week or so, the bees will of their own accord destroy all cells but one.

Mr. Scholl gives a bit of wisdom in few words when he says, "All colonies should be requeened as soon as they are found to have inferior queens, no matter at what time of the year." The book contains much information, and every Texas bee-keeper should secure a copy.

◆

Meeting of Southern Idaho and Eastern Oregon Bee-Keepers.—A field meeting of the above mentioned Association took place July 16, at the apiary of C. E. Dibble, of Washoe, Idaho. Between 35 and 40 of the leading bee-keepers of these States were in attendance with their families. These men represented a total of about 10,000 colonies, the output of which was between 17 and 18 carloads of honey last year.

According to the report, the apiary of Mr. Dibble contains some 500 colonies of bees. One of the features of the occasion was the presence of Prof. Wilson, of the State Agricultural College of Oregon, and instructor in bee-culture at Corvallis.

We hope to give more concerning this Association and its doings in the future. The West has a fine prospect for success, and Idaho and Oregon are very progressive States.

◆

A Peculiar Enemy of the Bee.—A renowned French entomologist, J. H. Fabre, is the author of a work which was awarded a prize in December, 1910, by the French Academy. The book is entitled, "Souvenirs Entomologiques," and contains an interesting description of a European wasp which preys upon the honey-bee. This insect is named "philanthus apivorus." We quote the following abridged explanation concerning the philanthus from a newspaper clipping sent us by Mr. Bechley, of Searsboro, Iowa. It gives the pith of Fabre's interesting statement:

"When a bee is near enough for attack, the philanthus draws up her hind legs, points the antennæ forward and suddenly springs to the attack. The bee, in spite of its sting, is rolled over, and with the speed of lightning the philanthus curves her body under her so that the bee's sting—stabbing back and forth—can only encounter the mailed surface of the back. Then with an art which is wonderful, the philanthus drives its sting upward and forward at a microscopic point on the throat of the bee beneath which lie the nerves of the neck. There is a slight trembling of the limbs and the bee is dead.

"So far, there is nothing very surprising in this attack, it is similar to that of many insects of prey. But what follows is most unusual. As soon as the victim is dead, the philanthus begins a most elaborate system of massage, manipulating the abdomen of the bee until, drop by drop, all the honey that was in the abdomen is squeezed out of the mouth of the corpse, the murderer eagerly sucking up every drop of the sugary juice. The process is continued until every drop is squeezed out of the body of the bee. It is an atrocious meal, but it clears up one mystery—the honey eating philanthus is not an eater of flesh, only of the nectar that has already been collected by the bee.

"But the philanthus does not need to resort to this theft in order to obtain nectar; it is as well provided for as the honey-bee itself. Scarcely would it risk death from the bee's sting in order to secure that which could be obtained without danger. The mother insect has other duties beside food; she has to provide for her offspring. When an investigation into the habits of the larva was made, it was ascertained that, like many other insect larvæ, it must have flesh to feed upon. Experiments made by Fabre, proved that even the very smallest amount of honey is poisonous to the larvæ of the honey-eating philanthus, and that the brutal slaughter of the honey-bee and the elaborate precautions made to exude every drop of honey from the abdomen were the only means whereby the insect mother could provide food for her little ones.

"All sorts of insects prey upon others to provide food, not only for themselves, but for their larvæ, but as far as known this is the only insect which profits in this peculiar manner, securing food for itself by means of the stores of nectar while it is preparing the body of its prey for its young."

◆

Producing, Preparing, Exhibiting and Judging Bee-Produce.—We have upon our desk a book with the above title, by W. Herrod, Esq., junior editor of the British Bee Journal. It is a splendidly composed work, with 131 illustrations, exhibiting the best methods of preparing bee-produce for Fairs.

As the publisher avers, "The show bench is the best means of creating a market for the produce of the apiary." It has been used to the utmost in England. It should be used more here.

The book treats of all the products of the apiary, both comb and extracted honey, vinegar and mead, cakes, confectionery, medicines. A chapter is devoted to observatory hives and appliances, another to packing, etc.

The book has 168 pages, and sells at 2 shillings. We believe it would be well worth the money to many of our readers. Copies could be secured through this office, if desired.

◆

Bee-Stings for Rheumatism.—Mr. John Bachmann, of Bass, Mo., some 20 years ago suffered acutely with inflammatory rheumatism in both arms and hands. His doctor had told him that he could never be cured. He read in the St. Louis Globe-Democrat about bee-stings being a cure for this trouble. So he bought some bees and went to work with them, and secured plenty of stings. He was cured in a few days, and although the disease has a tendency to reappear, he can always stop it with bee-stings. He was present at the Missouri meeting, and was as able-bodied as any man of his age. He is 65 years old.

M. E. Darby, the State Inspector, reported a similar experience, although with him the disease was not so acute, as he is a much younger man.

◆

Ontario Experimental Farm.—The annual report of this farm is on our desk. It contains 278 pages, and is replete with information. Some 6 pages are devoted to the report of the lecturer in apiculture, Mr. Morley Pettit. The college apiary contained 45 colonies, and the student membership of the "apiculture club" was over 100.

◆

An English Apiarist Appointed in Canada.—Mr. F. W. L. Sladen, F. E. S., of Ripple Court, near Dover, has been appointed Assistant in Apiculture to the Dominion Entomologist. Mr. Sladen is the author of a booklet entitled, "The Humble-Bees," written when he was only 16 years of age, and it is said that this work shows an acquaintance with the subject "far beyond his years." His work on "Queen-Rearing in England" originally appeared in the British Bee Journal in 1904, and was published in book form 1905. Mr. Sladen is 36 years of age. We welcome him to active work on the Western Continent. Men like him are needed everywhere.

◆

Death of Mr. Walker.—We regret to report the death of Mr. Byron Walker, of Cicero, Ill., formerly of Clyde, Ill., which occurred July 25. He had been in failing health for some years. Mr. Walker, when in his prime, was a very large bee-keeper, raising both comb and extracted honey. The sympathy of the American Bee Journal, as well as all who knew Mr. Walker, goes to the family in their bereavement.

◆

Meeting of Kansas Bee-Keepers.—Mr. J. J. Measer, in charge of the honey and bee exhibit of the Kansas State Fair at Hutchinson, Kan., has arranged for a bee-meeting to be held on Sept. 19, immediately after the awards are made. All bee-keepers in attendance at the fair, or who can possibly arrange to be present on Sept. 19, should not forget this meeting. It is hoped there will be a large attendance.

◆

A Distinguished Apiarist.—Mr. Antonio Biaggi, of Pedevilla, Switzerland, on the Italian slope of the Alps, has been successfully rewarded for exhibits of bees in Berne, in Liege, in Geneva, in St. Louis, and later in Frankfort. Surely, very few men can boast of such a record in bee-exhibits.

◆

Death of Dick Lankenau.—Missouri bee-keepers will be sorry to hear of the death of Mr. Dick Lankenau, of Sedalia. He was accidentally killed while supervising the repairing of a well pump on his farm. Death occurred almost instantly.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

She Can Keep Bees, Why Not Let Her Vote?

In the columns of the Country Gentleman is reported "the case of a smiling, white-haired old lady who lives away up in the mountains of western North Carolina, in that country which the railroad people call the 'Land of the Sky,' and who has kept bees for the past 20 years. Despite the fact that she has been making from $2000 to $3000 annual income from her colonies for years, the little, old lady will tell you that if she were not 65 years old she would show folks what real bee-keeping is. She has never had a case of foul brood, and but little bee-paralysis, which she quickly stamped out. She has had but two honey failures during her experience, in one of which she still managed to pull out $450 ahead; and she generally puts on the market between 9000 and 12,000 pounds of honey a year from her 120 colonies. Last season, she stated, was a fair one, her colonies averaging 75 pounds of honey each, with several producing as high as 160. Prices usually range about 20 cents a pound, a figure which, she says, could be greatly increased if she were able to go into the marketing end of the business properly."

Now, isn't that an argument for the suffragists? Why shouldn't a woman vote that can do things after that fashion? Is there any mere man who ever secured $3000 for a crop of honey from 120 colonies? If there is, please trot him out. "Prices usually range about 20 cents a pound," but there must have been one year when the honey brought 25 cents, for it would need that price to make 12,000 pounds amount to $3000. But there's no need to quibble about getting 25 cents a pound from the nabob neighbors of those North Carolina mountains. Fortunately the name and exact address are not given, else that locality would surely be overstocked by the rush of bee-keepers to locate there.

◆◆◆

Swarm Prevention by Dequeening—Requeening by the Paper Plan

Here is one of the ways that the swarming nuisance is dealt with in this locality.

When a colony swarms, or seems determined to swarm, the queen is removed, and it is left queenless for a period of 10 days, then its own queen may be returned—if it has an unusually good queen it probably will be returned—but, in that case, we are not sure that it will not swarm again during the season, and it must be looked after. If, however, in place of its own queen we give it a queen of the current season's rearing, we feel safe as to its swarming again. After the queen is safely introduced the word "PASS" is written in the record book, and that colony needs no further attention for the rest of the season except to attend to its supers.

A common plan of procedure has

been to go to the colony, destroy all queen-cells, remove two frames, then go to a nucleus that has a laying queen, take two frames of brood with the queen and adhering bees and put in place of the two frames removed. We have always considered this a safe plan of introduction, and have rarely failed to write the word "PASS" as the next entry for that colony; so we were somewhat surprised this year, on opening up 3 colonies that had been thus treated, to find every one of them queenless. Just what the trouble was is hard to say. We have been having a lot of rainy, cool weather, and that may have had something to do with it.

Clearly something else must be done. We have introduced by the caging plan, but do not like it as well on account of its interfering with the laying of the queen. So we tried the newspaper plan; took off the supers, covered the hive with one thickness of newspaper, without making any hole in the paper, placed an empty hive-body on this, placed the queen from the nucleus with her two frames of brood and bees in it, put one thickness of newspaper over this with no opening in the paper, and put on the supers which were full of bees. We left an opening just big enough for a bee to pass out under the cover over the supers. In a day or two we found the paper gnawed away, the bees united, and queen laying all right. It is a little more bother to introduce in this way, but evidently safer, no doubt owing to the fact that at first the uniting is very gradual. So far as we have tried it, and we have used it for several years, the newspaper plan of uniting has always been a success.

Three Honey Recipes

I have forgotten the source of these recipes, but I give the following for what they are worth:

1. If threatened with a cold, take this drink just before jumping into bed: One spoonful of honey, one-half lemon juice stirred in a tumbler of boiling water. Drink as hot as possible.

2. For all burns, sores on the skin, chapped hands and kindred ills, take two tablespoonfuls of honey, one of camphor, and a small piece of wax, all heated together, and then let cool.

3. For coughs and sore throats take one tablespoonful of spruce gum, pounded fine and dissolved in a pint of honey.—D. M. MACDONALD, in *British Bee Journal.*

How to Interest the Boys and Girls

Let bee-keeping mothers wishing to interest their children in bee-keeping, try this scheme:

Give to each child a colony of bees with the distinct understanding that everything that he can make with that colony belongs to him. You may be surprised at the interest awakened. Especially will this be true if there be more than one child in the family, for competition spurs their efforts. Even young children from 6 to 7 years old may compete with the older ones. Indirectly it may help to solve the problem of how to keep the girls and boys on the farm.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

A Bee-Keeper's Week—Over-confidence

Sunday, July 20, George, a bee-keeper neighbor, and I went down the river 35 miles to transfer 45 colonies of bees from box-hives. George had raised the boxes end up and placed our hives with drawn combs under them about a month before. It rained 4 times during the day, and we were soaked through as many times. Our bedding was damp, and we put it on the floor of the old adobe house the first night. Mrs. H., who sold me the box-hives, got a lunch for us at 9 o'clock p.m., so we did not go supperless to bed.

Monday, July 21, we began transferring the bees by smoking them down into the lower hives. They did not drive well, and we lost several queens in the operation. We cut out the combs, threw the brood out in a pile and ran the combs of honey through the capping melter. Large extracting knives were used to cut out the combs and separate the honey-comb from the sealed and unsealed brood. The bees seemed to be going out of the boxes well, so George went ahead smoking out and setting off the old boxes until he had 20 set off. Soon the bees began going back to the boxes, and after that we had an awful time to get them out at all.

By night we had 35 colonies driven out, and had run 60 10-pound pails of honey through the melter. We worked until 10 o'clock p.m., running the melter and filling pails. We were tired and awfully sticky with honey when we quit for the night.

Tuesday, July 22, we began work at 6 o'clock, and had the last 10 boxes emptied of bees by 8 o'clock. We cut the honey out and threw away the brood, which the chickens relished. Bees worked on the old sticks, frames, and hives until about 8 o'clock, when the alfalfa and sweet clover bloom became more attractive. George and I did not think it would pay to save the brood, as it would be a sticky job fitting it into frames, and the combs would not be very good, even after we had fitted and fastened them in. I gave Mrs. H. all the wax for keeping the melter going on the kitchen range. We finished running the honey by noon, after cleaning the melter twice in the forenoon. When all the 10-pound pails were filled we counted 91 in all. Many of the colonies had stored the lower stories full of honey so they weighed 60 pounds or more. Some, however, did not have any honey. In the afternoon we screened the tops of the hives with wire screens, using lath to put around the hive edge. We stapled on the bottom with a hive staple at each corner.

We had a hard time getting all the bees into the hives, and it was very warm and sultry. We set the frames up in front of the hives that were clustering out, and the bees crawled all over these combs. Then I took them to weaker colonies and shook the bees into them. In an hour I had the bees well equalized. I did this by moonlight, after supper. I went to bed dead tired on the hayrack, bedded with old hay for hauling the bees.

Wednesday, July 23, we got up at 4:30 a.m., and I closed up the entrances with cloth while George sawed lath and nailed the entrances tight. By 8 o'clock we had all the cracks and holes closed and the bees on the wagon. We started at 9 o'clock, and had not gone more than a half mile when one of the strongest colonies began to smother. We unloaded it and drove on. We had 4 horses and 46 hives of bees; the road was rough, and we went 5 miles before 1 p.m. We saw then that all the colonies would smother unless we unloaded, so we took off the hives and released them. Some of the best ones seemed nearly gone, but we will not know the exact loss until we go back. The day we started out was cool, but it became very hot about noon and water did no good. Wet blankets were laid and suspended over the tops. We left for home at 4 o'clock p.m. and drove 15 miles to a rancher's where we stayed all night.

Thursday, July 24, we drove the remaining 15 miles by noon, and made arrangements to go back after the bees next week. We will take empty supers and screen the tops of them. This will give clustering space so no smothering should be experienced.

Friday, July 25, I put on more supers on the colonies at home. I walked to town, bought lumber, and engaged a carpenter to build a 12x14 foot honey-house at the new out-yard I am establishing. Native common lumber costs $22 per thousand, and barn hinges for the doors and windows 50 cents a pair. The 3-ply paper roofing costs $3.25 a roll—it takes two rolls. The carpenter charges $4 a day, and my bill for lumber and all was $43. The lumber yard does not deliver, so I had to hire a team for $2 to haul the stuff a mile.

Saturday, July 26, the carpenter and I have the honey-house about half done. There are many loose knots in the lumber, and I will have a hard time to make the house mouse and bee tight. I will probably line the building with 1-ply roofing on the inside, and tin the cracks and holes in the floor. I will raise the corners on heavy timber pillars about one foot off the ground, and place inverted tin pans on them to keep out the mice, *a la* corncrib.

The room is built with the studding on the outside, so that piles of hives and supers can be stacked up well on the inside without coming in contact with the studding. Then some day I may want to sell it and it will make some rancher a good granary. A window 2 feet by 4 feet 6 inches is placed on the north side. The door is close to the northwest corner on the west side, and the roof slopes to the north with a fall of 2 feet. The walls are 7½ feet on the north side, and 9½ feet on the south.

The comb-honey scraping bench will be placed along the north side of the room under the window. I do not plan to have glass in the window, but will have a double screen and escape. A hinged door to close the window will hook up to the ceiling when the window is open. Two by sixes are used for joists and rafters.

Next week I plan to finish the honey-house and bring the bees up the river. I shall buy a few more if possible, as I intend to build the yard up to a hundred colonies. Some shade is provided by apple and peach trees for the apiary, but I am not much of an apostle of shaded hives. Sweet clover and alfalfa furnish the honey, and the season closes from Sept. 15 to 30.

It has been a busy week, and would have been considered a successful one but for the smothering of some of the bees. It is the first time such a thing has happened to me, and I had become over-confident of the sufficiency of the screened top with clustering space. If at all convenient I shall move the bees at night. Part of the trouble was the rough road, although we had the hay-rack well bedded with hay.

Bee-keepers make mistakes in two ways, through inexperience and over-confidence. I have moved bees so much with no losses that I did not take all things into consideration.

[An account of mistakes is just as useful to the reader as the description of successes. We learn much by the experiences of others. But to appreciate a journey of the kind described by friend Foster, one must be somewhat acquainted with Colorado conditions.—Editor.]

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

That Texas Bee-Bulletin

Since the announcement by the Texas Department of Agriculture of the publication of my bulletin, "Texas Bee-Keeping," there has arisen a demand for it, and a desire for information as to the proper place from which a copy may be obtained. Numerous requests were sent to the Texas Experiment Station, to A. & M. College, to the United States Department of Agriculture, and to my old College Station address. The result is that some of these requests are delayed a long time; some never reach "the right place," and are returned to the writer.

Those who are interested and desire one of these bulletins, should address a postal card to "Hon. Ed R. Kone, Commissioner of Agriculture, Austin, Tex.," asking for Bulletin No. 24, "Texas Bee-Keeping." The Department desires to place this bulletin, which was published at considerable expense, into the hands of those who are actually interested, instead of mailing them out haphazardly. It is well, therefore, that applications be made at once, as the supply is not in proportion to the demand for it. The bulletin will be sent free.

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Texas Bee-Keepers Meet

The annual meeting of the Texas Bee-Keepers' Association at College Station, Tex., July 30, 31, and Aug. 1 was a successful one. The comparative merits of the different races of bees, modern bee-keeping and its future, bee-keeping as a side issue and as an occupation, and the same for women, each received due attention. Also such topics were discussed as the management and care of out-apiaries, the best and most practical methods of increase, and the attractions, delays and disappointments in queen-rearing. Production of comb and extracted honey, its sanitary handling and preparing for market, best receptacles, how to get the best prices, how to improve the demand, the outlook for future marketing, and the value of exhibiting at fairs, were all topics of special interest.

The present condition of foul brood, what has been done, and is being done for its eradication, were given in the reports of several inspectors. It is one of the *most important* subjects for every bee-keeper, in any part of the globe, and it is hoped that every bee-keeper will take the precautions to acquaint himself, at the very first opportunity, with this dreaded disease.

Although there may never be foul brood in the neighborhood of many bee-keepers, it behooves *every one* to prepare himself before hand in case such disease should appear. It is necsary to be posted, yea, well posted in order to know what to do to save the bees if the disease should make its appearance in one's apiaries.

As a rule, too much time is wasted on the very a-b-c's of the various subjects under discussion. This is alright in a local meeting, but during the three half-day sessions of the State association, time is too short and valuable for this. It should be discouraged. To those present at these meetings, the rudiments of modern bee-keeping should be well known. For those who are not acquainted to this extent, they should procure a copy of the many bulletins published on the subject by the United States Department of Agriculture, and the various other departments of their respective States in which these persons are located, or buying a bee-book, or subscribing for a bee-paper should be suggested. The question-box is another outlet to take care of such things.

But in handling the main subjects of the program, the details should be mentioned as little as possible, putting the most stress on the more important parts, and bringing out as many new points as may be known by the few in attendance. That should be the chief object kept in view when attending a State association meeting. It is to be hoped that it can be arranged in such a way that the more important new things will receive more attention in our programs hereafter.

The following officers were elected: President, T. P. Robinson; vice-president, B. M. Caraway; secretary-treasurer, W. C. Collier, of Goliad. The regular time and place of meeting is in July, at A. & M. College, College Station, Tex.

◆

How Often Queens Mate

It is conceded that, as a general rule, queens mate only once, but it has often been reported that queens have been known to mate several times. A definite reason for the probable cause of these several matings has as yet, I believe, not been given.

In discussing the subject of queen-rearing at the recent annual meeting of the Texas bee-keepers, Mr. F. L. Aten mentioned, in going into the details of mating of the queen and drone, that the male appendages brought along by the returning queen, from her successful mating trip, might possibly be removed by the bees. The muscles protruding from the queen's abdomen are generally removed by the bees, following the return of the new-mated queen. This can often be seen by the apiarist, and Mr. Aten contends that it may be possible for the bees to draw out the entire mass constituting the male appendages, together with the contents the seminal, or fertilizing fluid. In that event, since the seminal fluid may not have been absorbed into the sperm-sac, or spermatheca of the queen, she does not become fertilized. Mr. Aten stated that this might happen several times to a queen, and may be the reason why she mates several times.

One thing ought to be understood by the reader, and that is the difference between a queen being mated and actually becoming fertile; that is to say, a queen may have mated, and yet under such conditions as the above, for instance, may not be fertilized. Fertilization takes place after mating, or after the seminal fluid from the drone, to which she was mated, is stored away in the spermatheca.

There may be something in this, although I have thought that it would be impossible for the bees to remove the entire mass of the male appendages, together with the contents. My deductions were mainly based on the fact that the hold of the queen on the male organs during copulation is of such force that they are torn entirely from the drone's body when the two separate. This is the cause of the immediate death of the drone. If this firm hold on the male organs by the queen remains, it is doubtful whether the bees can remove them as intimated. Considering, however, that this firm hold may exist only at the time of copulation, and that the muscles of the female organs in the queen may relax after this period, the male organs may not be held as firmly, and, therefore, may be easily removed. In that event, this would be a good explanation for some queens mating more than once. Of course, after a queen becomes *fertilized* she remains so the rest of her life, and our authorities agree that she does not mate again.

This matter is intensely interesting to me. It is of some scientific value, as well as giving us an explanation for queens mating oftener than ordinary. If other observations of this nature have been reported, we would like to hear about them.

[The only other explanation we have ever heard is the possibility of the spermatheca not being sufficiently filled by one copulation.—EDITOR.]

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Foul Brood and Pickled Brood

While I have been much interested in the recent discussion about the various kinds of dead brood, for various reasons I purposed to have nothing to say on the question, but as the Editor has urgently requested me to give my opinion on the matter, I will do so in as few words as possible. It is quite unnecessary to give the various descriptions of the different maladies, as they have been so well described in the American Bee Journal that any one should be able to diagnose dead brood of any kind that might be found in his apiaries. I wish to emphasize though the statement made by Mr. Millen, that starved brood does not have that "greasy appearance" so characteristic of a bad case of European foul brood, and that peculiarity was the first thing that impressed me so forcibly when I first found the outbreak in Northumberland county some years ago. How any one can confuse this disease with "starved brood" is a mystery to me, and in the words of Mr. Pyles, "It is beyond my comprehension."

I was not at all surprised at Mr. McEvoy's statement that 90 percent of the so-called European foul brood is only starved brood, as that opinion is right in line with his position on the question. He has more than once told me, when the disease was at its worst in New York State, that if they "would turn on the feed" that "black brood" would disappear. After finding the genuine thing in Northumberland county a few years ago, I have ceased to agree with Mr. McEvoy on this matter.

As to pickled brood being "starved brood," I cannot see it in that light, for as Mr. Pyles says, "There is quite a difference in the two." I believe that pickled brood is caused by some organic or constitutional weakness in the queen, and a simple experiment should prove this. Go to a colony that has a lot of pickled brood and kill the old queen, requeening with a young, vigorous queen of Italian or Carniolan stock. The very first lot of brood reared from this queen will be perfect, and as the nurse-bees are of the same variety as those that were there when the pickled brood was in evidence, how can it be caused by poor feeding? The starvation theory, as applied to pickled brood, is that the nurse-bees are poor feeders, and do not properly care for the larvæ.

I have repeatedly seen pickled brood stay in a hive right through a heavy honey-flow, but when requeening is done it disappears as soon as the first batch of brood is in evidence from the new queen—is it not plainly evident that the queen is at fault? I have repeatedly proven this to my own satisfaction, and if there are any doubters on the question it certainly is an easy thing to try the plan. From the discussions in the American Bee Journal, it is plainly evident that *every* bee-keeper should know the different bee-maladies at a glance, and unless he does know them he will be sure to get "stung" badly.

Another thing I have been glad of, is that it is made pretty plain that Italians are not *immune* to the disease. While Italians or Carniolans usually resist the disease better than the blacks, yet this is not always the case. One well-known strain of Italians suffers just as badly as the blacks, while another strain is more immune. Please do not ask me to which strain I am referring, as I have no desire to hurt one man's business and give another free advertising.

Dr. Miller's Queen-Rearing Plan

The latest plan of queen-rearing, given by Dr. Miller in the August American Bee Journal, "looks good" to the writer of these notes, and again a resolve has been made to try some queen-rearing experiments in the near future. Very humiliating to make such a confession, but the truth is that such "resolves" have been made before, and only *once* put into execution. While that solitary trial at rearing queens by the "new fangled" schemes was entirely successful, somehow I always seem too busy to do much of that kind of work when I have half a dozen yards of bees to look after. While I have bought lots of queens that would hardly qualify as "good," yet the most of them have turned out fairly well, and I expect that for some time yet I shall keep paying out hard-earned dollars each year to the commercial queen-breeders. Some bee-keepers like to rear their own queens; perhaps I would, too, if I had but one or two yards, but as it is I would rather keep more bees and let some one else rear my queens, provided I can get good value for my money.

"Red Clover" Bees?

Talking about "red-clover" bees, I have them this year. This afternoon, about 2 o'clock, the bees were working hard on the buckwheat, as the forenoon had been misty—ordinarily with us no bees will be seen on buckwheat after 1 p.m. Passing a field of second crop red clover, I left the horse in the road and climbed over the fence to see if there was *anything doing*—any of the rest of you fellows ever do such rambling around like that?

Imagine my surprise to see the clover blossoms literally covered with bees; in fact, just as many bees on the blossoms as though it were alsike instead of red clover. Other years, when our bees worked some on red clover, it would always be in time of a drouth, but at present the ground is literally soaked with rain. Very few Italians in the field, as at the yard I had just left there are no more than half a dozen colonies of this race, the bees being mostly Carniolans and their crosses, with some black blood still present.

This would seem to prove that it was not a case of "long tongue," and that the clover blossoms were either shorter in the tubes than usual, or that the nectar was so profuse that it literally bubbled out so that the bees could reach it. I prefer to take the latter view, as with abundance of moisture in the ground, and the air warm and full of humidity, the conditions were ideal for nectar secretion. From the fact that the bees were there at the time when the buckwheat was yielding freely, is proof that they were getting honey.

Bee-Escapes — The Steam-Heated Knife

This season, for the first time, we have used bee-escapes for taking off honey. While they were used in only 2 of the 7 yards, yet our experience was extensive enough to give a general idea as to how they work. Placed on the hives at noon, and the supers taken off the next morning, gave best results, but as the weather was cool all the time they were used, I cannot say how they would have worked in real hot weather. As to their value, no question but what they are a good thing to use in a yard which is near neighbors, or at any place where it is not desirable to have cross bees.

When it comes to a question of making time, they are not to be considered, and I would not be bothered with them in a large apiary where it is desirable to "hustle off" a lot of honey in a short time. At one yard I bought 40 boards all complete, and they cost quite a lot of money, too; in fact, I think that the bee-escape itself is about the dearest thing in the whole line of bee-keepers' supplies. Using all of them, 40 supers could be cleared, and they would average about 40 pounds each—1600 pounds in all.

At the home yards, Mrs. Byer, myself, and one to turn the extractor, could run off 350 pounds of honey per hour even when combs were all sealed; we couldn't do this though until we used the steam-heated uncapping knife. As a little honey was coming in all the time we were extracting, and no robbers bothered, needless to say we had no use for the escapes at that time. However, I believe they will come handy in taking off supers when the harvest is over, so I shall refrain from unduly criticising them until they have had a more extended trial.

Speaking of the steam-heated knife, it is one of the new things that will stay with us. The capping melter was in our estimation, more bother than help when all features were taken into consideration, and it is laid aside at least for the present. A small tea-kettle, holding about a quart, will go half a day without refilling, and will generate enough steam over a small coal-oil stove, that costs less than a dollar, to keep the knife so hot that it will literally slip through the combs no matter how thick the honey. The ordinary spout of the kettle was taken off, and the spout of a common machinist's oil-can soldered on in its place. On this the rubber tubing fits snugly. With this simple equipment much hard work is saved when there is a lot of uncapping to do.

Feeding for Winter Stores

Just now many are enquiring as to the proper time to feed bees for winter. This is a question depending upon locality. For any northern section that has no fall flow the work should be done early in September. In our locality, of late years, buckwheat is grown quite extensively, and we have had to alter our old-time plans to meet new conditions. Buckwheat is in bloom up to Sept. 1, and sometimes later, and that means heavy brood-rearing later than is the case where there is no flow after clover or basswood, Of late years we do not feed until Oct. 1 to 15, and have found that it works all right. At the same time I advise earlier feeding wherever it is practicable.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Suwanee River Apiaries

The photograph given shows one of the writer's apiaries "Away down upon the Suwanee *ribber*," in Florida. The man on the hive in the rear is Mr. R. L. Landrum, who has charge of these apiaries, and those seen with him, are his helpers. I have never seen these people, or even any of the bees.

Mr. Landrum was reported to me as a man who "delighted in work," and when I wrote and asked him to take charge of these apiaries, he wrote: "I will take charge of the apiaries, and if I don't make them a paying proposition I will not expect any salary."

I wrote him that he had the job, and from what he has done with the business, he surely "delights in work." Would that we had thousands of just such men in Dixie engaged in bee-culture. The most of these Suwanee river apiaries were established and owned by the late Mr. R. W. Herlong, of Fort White, Fla., whose death occurred over a year ago.

We always prefer to locate apiaries under natural shade, and this one is shaded by turkey and live oaks. The scattering grass seen is wire-grass,

One of Mr. J. J. Wilder's Apiaries on the Suwanee River. An Apiary Which its Owner Has Never Seen. It Takes Unlimited Confidence to Run Apiaries by Letter Alone, and it also Takes an Extra Good Man as Manager to Carry Out the Instuctions of the Owner.

which covers a large section of Dixie. The clump of low, scrubby bushes at the rear of the hives on which the boys are standing, are chinquapins, and one of the main honey-plants of that section. The sand along the famous Suwanee river is very deep, fine and white, and the natural growth is not very heavy.

Information Wanted

Dear Mr. Wilder:—My parents are soon going to settle at Orlando, Fla. How would that section do to start in the bee-business? Suppose I purchase a copy of your book, "Southern Bee-Culture," and use it as my hand-book, would it be necessary to take a correspondence course in bee-culture?
Cambridge, Mass. Leon P. Jones.

The vicinity of Orlando, Fla., does not appeal to me as being much of a place to start up an extensive bee-business. I rather believe the venture would be a failure, as there are but few reliable honey-plants there, but not far out in the country, in the sand ridges, you will find a good partridge-pea range, and there it will pay you. It would be best to look the country over for 30 or 40 miles around before beginning to locate out-apiaries or to embark in bee-keeping extensively.

Yes, by all means obtain in every way you can all the bee-knowledge possible. Take up and finish the correspondence course, then take "Southern Bee-Culture" as your hand-book, and you will attain success if the necessary amount of energy be expended.

Does Changing Location Pay?

Dear Mr. Wilder:—I once lived in Washinston Co., Ga., and while there became interested in bee-culture and established a good apiary, but I was not content with the returns from my bees, and desiring a better location came to Hawk's Park, Fla. But I have found it no better for bee-keeping than dear old Georgia, and I would like to go back there and engage in honey-production, if I could supplement the regular honey-flow with clover or some other honey-plant similar. Poplar trees are about all the honey-plants they have there, and it has been lumbered closely.

Have you succeeded in getting clover, or any other honey-plant, started which would supplement your honey-flow in Georgia? I know you have there everything possible to help out your honey-flow.
Hawk's Park, Fla. S. W. Whitfield.

Friend Whitfield, since you left Washington Co., Ga., a man just two counties away became interested in bee-culture and has been very successful.

There is no doubt that it does not pay to leave one location and move to another with the sole object of producing more honey. If a bee-keeper wanted to change climate for his health, or if he wanted to produce a certain kind of honey, the plant of which did not grow in his present location, a move would be justifiable, otherwise it would not. If I were located elsewhere I surely would not leave and move here, and I am not going to leave this location for any other. I am going to be content and do the best I can. I might do better elsewhere, or I might do worse, so I will run no risk.

No, I have not succeeded in supplementing my honey-flow here with any other kind of honey-plants, although I have made several efforts. I don't think any one else can succeed. The acreage of cotton and field peas is rapidly on the increase, as are the summer and fall honey-flows. This is true of all the cotton-belt country.

Removing Supers and Replacing Old Comb With Foundation

Dear Mr. Wilder:—Should I take off my supers and put the covers down on the hive-bodies for winter? Can I use the old comb in them next spring, or should I replace them with full sheets of foundation?
Lake Kerr, Fla. J. V. Ryals.

Comb-honey supers should be removed at the close of each honey-flow and left off during winter. If the supers are not removed at the proper time the bees will spoil them. Empty bulk comb-honey supers, or supers containing only foundation or partly-drawn comb, should be removed; but supers containing empty drawn comb can be left on the hives. All extracting supers should be left on the hives so the bees may protect the comb.

It is never necessary to replace old comb with full sheets of foundation if such combs are not crooked or do not contain drone-comb. The age of comb does not impair its value for the brood-nest nor for the extracting supers, even if it does become very dark from constant usage; in fact, queens prefer to lay in the darker combs, for often they will ignore the light, new comb for the darker. Bees will also store honey more readily in darker comb.

It is a prevailing idea among beginners in bee-culture that every now and then they will have to replace the old comb with new, and a good number do so at their own loss.

The Summer Honey Crop

The spring honey crop throughout Dixie was about an average in most localities. The tupelo-gum region had a better flow than was expected, for the bee-keepers procured an average crop.

The crop in the palmetto region was almost a failure. The average from all sources there was not greater than 20 pounds per colony.

The bee-keepers in the clover region had a good flow, and the summer flow has been good everywhere.

The cotton plant and field peas are still yielding well, and the crop will be considerably above the average. This is very gratifying, for in some sections the bee-keepers depend solely upon the summer flow for their surplus.

The constant local showers are keeping the plants growing and extending the flow. It will be late in the season before the honey-flow ends. Many bee-keepers will make a mistake in leaving all the honey on the hives until the close of the season, which will be late. If the honey is not removed as fast as the bees seal it, it will granulate at the approach of cold weather, and much of it before it reaches the consumer. This should be done by all means, and it should be rushed on the market or a lot of dissatisfaction will arise on account of granulation.

CONTRIBUTED ARTICLES

Feeding Cubes of Lump Sugar

BY EDWIN BEVINS.

Starting to winter 85 colonies on the summer stands, in the fall of 1911, I lost 23. The responsibility for this loss is mine. I did not recognize the value of a good thing at first sight. The idea of using cube loaf sugar for winter feed grew too slowly in my mind, and I did not provide a sufficient supply early enough in the winter. Somewhere near one-half of the yard was fed this material. All colonies so fed, with 3 exceptions, are alive and well. These 3 had consumed all of the honey and sugar in the hives. Of the other colonies which died, some had not been fed at all, and some perished with a good deal of the honey yet in the combs.

Some colonies were saved by the use of unfinished sections turned flat on top of the top-bars, but I do not like these as well as I do the sugar, as in intensely cold weather it is not safe to use more than 2 to 3 at a time, as they are liable to divide the bees too much.

I have a feeling approaching chagrin at the loss of so many bees. The loss was entirely avoidable. I have most of my hives in pairs, facing south. They stand 3 or 4 inches apart, and when fixing for winter I put on an empty hive-body or a half-depth extracting super. I want something deeper than the comb-honey super. Then I lay two corn-cobs across the middle of the top-bars, then a piece of burlap, gunny-sack, or old carpet cut a little larger than the inside measure of the super, and place this right over the cobs, so as to cover the whole surface of the brood-chamber, but do not let the edges get between the brood-chamber and super. Then I put in a big chaff-cushion that almost fills the super. For this purpose I get old sacks that have been used to hold 100 pounds of sugar.

Then on the east, west and north of each pair of hives I place the three parts of a winter-case, arranged to leave a 4-inch space between the case and hives. The parts are held in place by means of wires. Straw is pressed firmly between the hives and on the 3 sides, so as to reach the tops of the supers. Then a cover of boards, large enough to cover both hives, and packing is put on. The cover is made to slant towards the front of the hives and reach a few inches farther. When thus prepared I am not concerned about the bees suffering much from cold if the food supply is plenty and easily reached. I have looked in at different times on those colonies having a good supply of the little squares of sugar, and found the bees always busily working among them.

To prepare the sugar, I put the quantity I want to give to a colony in a common tin wash basin, and sprinkle with warm water. I aim to get every cube softened a little, but do not use enough water to produce disintegration.

When giving the sugar I take out the chaff-cushion, then raise the back end of the cloth covering over the brood-frames, remove one or both of the corn-cobs, dump the basin of sugar right on top of the top-bars, so that the pile shall come in contact with the back side of the cluster, but mainly towards the back end of the hive. This is done to allure the bees in that direction, as the honey is generally in the back end of the combs, if there is any in the hives. One can, if he chooses, put the sugar all over the top-bars, but this, as a general thing, would call for more sugar than is needed in this latitude. All I want is enough to carry the bees until the time arrives when it is safe to use liquid feed, but this requires more than the bees will actually consume, as there should always be a pile of some depth for them to work on.

Leon, Iowa.

The Situation in Iowa

BY FRANK C. PELLETT,

State Inspector of Apiaries.

Foul brood is now reported in 32 of the 99 counties of Iowa. Both European and American foul brood are present in the State, and in some places both seem to be present in the same county. As the legislature failed to make a special appropriation for the support of the office, and the only fund available is the limited amount allowed by the executive council, it is impossible to do much work in the way of actual inspection this season.

Mr. Frank C. Pellett,
Iowa State Inspector of Apiaries.

An extended correspondence is being carried on from the office in an effort to get full information as to the extent and location of the disease. Circulars are sent out calling attention to the provision of the law, and methods of treating the disease. Where bee-keepers are menaced by careless neighbors, it may be possible to render some assistance.

The inspector suggested the advisability of adding bee-keeping to the other courses at the State Agricultural College, and in the extension work. Both Prof. Kennedy, who is at the head of the extension department, and Prof. Summers, the entomologist, express themselves as anxious to do anything that the interest will justify. The newspapers have given wide publicity to the conditions as reported by this office, and some have given editorial endorsement to the proposed plans, so that it now looks like it was "up to the bee-keepers."

It is hoped and expected that the next legislature will provide the means to make the thorough inspection of all colonies where the disease presents itself.

Atlantic, Iowa.

[We trust the bee-keepers of Iowa will begin an active campaign to secure help from the legislature as neighboring States have done. The Bee Journal offers its co-operation.—Editor.]

Improvement in Bees

BY A. F. BONNEY.

Space in a bee-journal is too limited to properly discuss so complex a question as improvement of the honey-bee, and I wish to make my position plain; that I do not deny that it is possible, while doubting that it has been, either by lengthening the tongue, altering their shape, decreasing their tendency to attack persons and animals, and, what is of vastly more importance, eliminating the swarming instinct and increasing their tendency to store honey. Different persons have at various times claimed these improvements for the bee, just as others have followed the dictum that the cellar is the only place for the bees in winter, while at least one prominent bee-keeper in a cold climate has discarded a thousand-dollar cellar to winter his bees out-of-doors. I was laughed at because I never liked a cellar; and now there is a great revival of interest in the chaff or protected hive.

People run after crazes in the bee-world as well as in other callings. In the year 1096, Peter the Hermit led half a million women and children toward Palestine to wrest the Holy Sepulchre from the infidels; in the two hundred years succeeding a million men perished in the same useless effort. I have only to recall to the mind of the student the Black Tulip craze, the South Sea Bubble engineered by Law; the persistent belief in the Divine Right of Kings, and the old belief that slavery was a Divine Institution, to revive memory of an almost endless list of frenzies which have held the minds of people at different times. Now it seems to be "Improvement of Bees," and while, as wife declares, I am prone to try new things, I hesitate to subscribe to this.

Man can argue only from what he knows. He may imagine strange things, but, like dreams, all must be *founded* on knowledge. We know not how the bees and other insects communicate information to their kind, though it seems that they do. Aside from the raw fact, we know nothing more about parthenogenesis than we did at first. We are ignorant as to when the male egg of the bee is fertilized, while all knowledge of life tells us it must be. It is claimed and denied that the poison of the bee-sting is formic acid, but, in all, about habits, mentality, and a disposition to reason, we must ever go back to what we know about man for argument. Man is the only *intelligently* industrious animal on earth, but there are those who claim that the *habit* of industry can be developed in the bee.

I believe, from present knowledge, that *management* has more to do with surplus honey crops than the breed or color of bees, and a very pertinent illustration of this is a small book issued by Mr. Doolittle a couple of years ago, in which he details how he got 114 pounds of honey to the hive when his neighbors got none. If my memory serves me, there was not a word in the book as to the *kinds of bees used.* It was all *management.* A letter from Mr. Darbishire, author of "Heredity and the Mendelian Discovery," confesses ignorance of the subject, but promises to let me know if he finds out anything.

What have we accomplished toward a *permanent* improvement of this insect in the past 50 years? A few men, and some professional queen-rearers claim much, but I defer vastly more to the opinion of professional bee-keepers; and few, if any of them, seem to be satisfied that anything has been done. They all seem to hope for results by and by.

Mr. Wesley Foster, in a recent letter to me used the term, "Hand-picked drones." I think the term original with him, and it expresses better than any other three words the vast difficulty of trying to breed bees.

While we always have had the bee just as it is now, and especially that branch known as the *Apis* family, we can trace the development of some of the domesticated animals through the ages, as the horse, for we find the bones of the original *Equus* fossilized in the rocks. The horse has developed from a little 3-toed (?) animal about 18 inches high to what we have now, but the knowledge of man goes not back to the time when the bee was different from what it is now, excepting that we have yellow Italians. Enthusiastic breeders of goldens make great claims for them, but the verdict of the bee-keeping world seems to be against them as honey-gatherers and for hardiness.

Before the Langstroth hive was invented there was but little talk of improving the bee, and I suspect that once more *effect* is being taken for *cause*, and that *management* as a factor in securing a crop is ignored in an effort to prove a claim. I know from persistent observation that a colony which gives a large surplus this season may in subsequent seasons prove to be of little value, and I have letters from old bee-keepers who tell me they have observed the same thing. What does it mean?

When I took up the study of Mendelism I hoped to be able to solve some of the problems pertaining to the bee, notably its improvement by selection and breeding, but the student will be disappointed with me, for the Mendelian law cannot be applied to the parthenogenetic insects. Could we "hand-pick" our drones we might do something *if* we could know what the queen was, that we were about to mate; but unfortunately for us, we cannot hand-pick our drones before mating, or know whether the queen is going to be worth a politician's promise. Her mother was a fine queen. Hum! Owners of trotting mares and stallions would give a pretty price if they could know when they bred them that the progeny would trot in swift time.

We seem to be able to keep up family markings in the bee-family, but as long as bee-men will find colonies of "scrubs," which produce enormous crops of honey, so long will bee-keepers doubt that there is much in "breed."

One of the most prominent bee-keepers in the United States says: "It is *almost impossible* for a queen-rearer to duplicate the characteristics of his breeding queen. The fact that Nature has designed that there shall be promiscuous mating among the drones explains how sports, showing 'extra yellow' or 'long tongues,' revert back to normal type in spite of us." In other words, we may, and can, and do perpetuate sports in the *domestic* animals, producing plain, barred and spotted chickens; race, general purpose or draft horses, milch or meat cattle, and so on down a long list of *domestic* animals; but we may not, cannot, and do not perpetuate the rare sports in the family *Apis*, because bees are wild by nature. It does not matter a whit how much we may believe that a non-swarming strain is possible, for belief is not evidence, and some prominent bee-keepers frequently acknowledge, unintentionally I suppose, that we have made but little progress in improving the bee.

Dr. Miller says, in reply to an enquiry (see page 117 of the American Bee Journal for April, 1911): "The trouble is, that if you get a queen of that kind you are not at all sure that her royal progeny will be like her."

J. L. Byer says, page 187 of the American Bee Journal for June, 1910: "...... and if I were asked what is the 'best bee,' I should certainly say the first cross of Italian queens with Carniolan drones. Unfortunately the next crosses are not nearly so uniform in good points as the first cross."

Why?

I am inclined to the opinion that in the hands of such men as Townsend, Doolittle, Byer, Cook, Miller (not Dr.), and others, *management* of the bees and hives has about as much to do with honey results as has breeding or selection. A colony of bees preparing to swarm does not store much honey; a colony lacking ever so little of being "ready" for the harvest will not give much surplus. I have never found what was the psychological *something* which made one of my colonies give me last (1911) season about 100 pounds of surplus, comb and extracted, while the year before, which was a vastly better season, and the queen but 2 years old, I got practically nothing. I think from what I have read and from conversations with bee-keepers, that all who keep bees have at some time had a similar experience.

I do not care to be rated an obstructionist. I am a firm believer in evolution, while many who write about selection and breeding, "throw a fit" when Darwinism is mentioned. I think the survival of the fittest (and the *fittest* among bees) an explanation of existing types.

It has been evident to me from the start of this discussion that some do not understand the fact that a "sport," which is our main hope of improving the bee, is not so designated on account of *actions*, but shape and color, the tint of hair or shape of body. The Century Dictionary says: "Sports are chiefly observed among *domestic* and cultivated plants." The reason is plain. Most of these are the result of centuries of breeding from structural oddities, and are always trying to revert to original forms. Wild animals and plants almost always remain true to ancestral types. The bee is not a domestic animal, and never will be. At best, "domestication" is but a relative term.

We want something more than an occasional colony which will give a large surplus. We want a strain of bees which will breed true to the type of *industry*. Color is unimportant. We want to be just as sure, when we breed, that we shall get a certain kind of bee as is the owner of the mule-footed hog that he will get pigs with an undivided hoof; the chicken fancier that he will have black, white or striped fowls. Bee-breeders come pretty close to this condition of *color*, as in the golden, but the verdict of the bee-keeping world is against them, whatever the future has in store for this strain. I insist again that *industry* is not a transmittable attribute, and once more assert that a man is the only intelligently industrious animal alive. He is the only animal that knowingly lays up more stores than sufficient for immediate or future need. The bee does not *know* enough to do this. The more specialized an animal is, the less it reasons. The bee is the most highly specialized animal alive today. This, I believe, cannot be gainsaid. If a colony of bees gets a hive filled with honey late in the season, it is still apt to swarm or die of starvation.

To those who have been abusing me for some of my rank ideas, I refer to Mr. Siebert's remarks in Gleanings in Bee Culture, page 402:

"*I do not know of any work in all apiculture that pays so well as weeding out poor stock*," and, in my own humble opinion, we have there all that has been gained from studying the bee for half a century. The movable-frame hive was a great step—in getting honey—while the few good methods of controlling swarming and *hard work* do the rest. None of these things have changed the honey-bee, however, for "the bee is wild by nature."

To shift the burden from my own shoulders to those of a man of some importance, I will close by quoting what Prof. Cockrill says: "The honey-bee is the last word in all bee-life, and has become so firmly established in her position that little change has taken place in her characteristics in three or four *million* years."

Buck Grove, Iowa.

Uniting Bees

BY DR. C. C. MILLER.

An esteemed correspondent on the other side of the water has expressed a desire for an exhaustive article upon this subject. The task would be very hopefully undertaken if that word "exhaustive" had been omitted. For it is not at all likely that any person knows enough to say *all* that is to be said about it.

To begin with, it must be frankly confessed that the writer does not fully understand why there is sometimes disaster when bees from two different colonies are put together in the same hive. Of course, it is fully understood that the trouble arises from the hostile attitude of bees of one colony toward those of the other colony, and especially toward the queen. But, why? One says that it is because each colony has its own peculiar odor, called hive-odor, and when a bee meets another bee it at once recognizes by the odor whether it be one of its own sisters or a member of another colony, and if the latter, then the bee with the strange odor is at once considered a foreigner and a foe, and is treated accordingly.

But there are those who say that although each colony may have its own distinctive odor, that odor plays no part in arousing a feeling of antagonism. And they cite proofs. If a bee returns laden from the field, and by mistake enters the wrong hive, it is kindly received. But if it enters with intent to rob, it is at once seized and roughly treated. If the innocent blunderer has the same odor as the robber, what has hive-odor to do in the case? In an apiary of dark bees, with a single colony of bright, yellow bees, the latter will be found scattered in many of the hives. It is clear that they are kindly received in spite of any odor they may have. So it is argued that the deportment of the bees, or something else rather than the hive-odor, is the controlling factor.

Is it not possible that both hive-odor and the behavior of the bees are factors in the case? At any rate, by acting on the theory that hive-odor is an important factor, good results are obtained. So it may be well to proceed with some practical hints as to uniting bees.

Bees unite more readily when nectar is coming in plentifully from the fields. Like folks, they are better-natured after a full meal. Unfortunately uniting is generally to be done, not in the height of harvest, but in spring or fall. Feeding may take the place of nectar from the field. However, feeding is not generally considered necessary.

UNITING ONE FRAME AT A TIME.

Early in the season it is considered

good practice by many to take brood and bees from strong colonies to unite with weak ones. The writer has practiced this for years without any fighting among the bees. No precautions were taken; a frame of brood with the adhering bees was taken from one colony and placed next to the outside frame of brood in the other colony. Of course, care was taken to see that the queen was not on the frame that was taken.

The same plan was sometimes used if 2 colonies were to be united. Generally one of the queens was removed a day or so before the uniting, although if there was no choice of queens that trouble was not always taken. A frame of brood and bees was changed from one hive to the other, and then at intervals of a day or two the others were added.

A shorter plan may be taken. From the 2 hives containing the colonies to be united, take the unoccupied combs, leaving in both only enough combs for one hive. When the bees are settled upon the remaining combs, put into one of the hives (or into an empty hive) one of the combs at one side of the hive, then a comb from the other hive, and continue thus alternating the combs until all are in the hive. The bees are so mixed up that there is no fighting.

This last plan may be varied, perhaps, with advantage. Before putting the comb in the hive, shake the bees from it in front of the hive. This gives additional confusion to the bees.

NEWSPAPER PLAN OF UNITING.

A few years ago the writer hit upon a plan that has so far proved better than any other. Take the cover from one of the hives and cover the hive with a newspaper. Then set the other hive over this. The bees will thus be kept entirely separate. By and by they will gnaw a hole through the paper large enough to allow the passage of a single bee at a time. Gradually more and more of the paper will be torn away until it will be practically the same as if there were no separation, and there will be a free intermingling of the bees of each colony. All this has come about so gradually that there has been no thought of fighting; at least no report of any such fighting has come to the knowledge of the writer.

This method of uniting is equally effective whether the colonies to be united are equal in strength or very unequal. If unequal it is well to place the weaker over the stronger. Yet it makes no very great difference. If one colony has been made queenless, place it on top of the hive containing the queen. A special advantage of this plan is that the bees in the upper hive are imprisoned for a day or so, and when they do find their way out they mark the location and do not return to the old location. If one colony be put over the other without the newspaper, the weaker one is likely to be killed.

BEES UNITING THEMSELVES.

Bees do not unseldom unite on their own account; sometimes peaceably; sometimes anything but peaceably. If a hunger-swarm attempts to enter the hive of another colony, the likelihood is that the strange bees will be killed. Two or more swarms may unite peaceably. Where queens are clipped, if a swarm issues and then returns to its hive, if some of the bees go to the wrong hive they may be killed, unless it be that they return to a hive from which another swarm has issued and returned within a few hours. Within a few days after a swarm has been hived it will receive kindly another swarm that may enter of its own accord, or be hived there by the beekeeper, provided there be a laying queen or a virgin in each hive. But if an after-swarm be thus united with a prime swarm, the after-swarm is likely to be slaughtered.

Marengo, Ill.

Improvement in Bees—British View

BY F. W. L. SLADEN.

Allow me to express dissent from the opinion quoted on page 134 of the American Bee Journal, that the honeybee, being a highly specialized animal, its improvement is doubtful.

Improvement depends upon two conditions, variation and selection. As far as it has been possible to ascertain, variation occurs in every known animal and plant. The fact that one colony of bees produces more honey than another under identical conditions, shows that variation occurs in the very character we most wish to improve. Where man has been able to breed an animal or plant by selection, he has always succeeded in making some improvement. The reason why so little progress has been made in the improvement of honey-bees is the difficulty of controlling the fathers.

This difficulty, as Dr. Bonney suggests, may be overcome by isolation, *i. e.*, by mating at a spot where there are no other bees within a radius of 6 or 7 miles, but this is not possible in settled districts; moreover, it is in these that we want to test the honey-

RIPPLE COURT APIARY OF MR. F. W. L. SLADEN, IN ENGLAND.

producing qualities of our breeding-stock.

In a limited way the difficulty has been overcome by a process of color selection and restricted mating in Ripple Court Apiary, near Dover, England, where a new breed, called "British Goldens," has been developed, and has now reached its ninth generation. Briefly the process is as follows:

The native bee of Britain is black. It is true Italians are introduced now and then, but they are soon absorbed by the native bee, and bees showing pronounced yellow bands are rare. In 1901 to 1903 a cross between America's goldens and English blacks was made, and by breeding from the yellower of the hybrids that appeared to be particularly good honey-gatherers, a new golden bee was produced. Year after year the golden bee is bred in its purity, and improvement is effected by allowing only the best colonies (4 to 6 out of 10 or 50) to produce queens and drones. As only black bees are kept by neighboring bee-keepers, it is easy to distinguish the mismated queens by their worker offspring, which are intermediate colored (*i. e.*, resembling 3-banded Italians).

The work is aided by the fact that no bees are kept within half a mile of Ripple Court Apiary, and also by the following interesting condition: The apiary is situated in a cool and wind-swept spot in the southeast corner of England, only 2 miles from the sea, and the queens are often compelled through stress of weather to mate near home. Careful analyses (fully reported in the British Bee Journal of Dec. 9, 1909) were made of the coloration of the workers resulting from almost all the matings that took place during the two seasons of 1908 and 1909, and it was found that those that took place in low temperature and wind (62 to 64 degrees in still weather, and 61 to 68 degrees with wind) included a much larger proportion of goldens than those that took place under more favorable conditions (about or over 70 degrees). Another important factor in getting pure matings was found to be lateness in the season. The proportion of all goldens from matings in August was large, and in September still larger. (Of course, drones of selected parentage were bred late in great numbers, and kept alive as long as possible in strong colonies containing unmated queens, and constantly fed.) Mating extra early in the season was of no advantage. On the contrary, it was found that in the early part, as well as in the height of the season, the matings that took place in perfect weather nearly always produced hybrids. The value of having an abundance of flying drones (and also many flying queens to attract them) was well demonstrated.

British goldens have improved since the breeding was started. They are certainly more industrious and hardy. I believe that the artificial selection has been aided by natural selection. The testing for honey-production, and the mating flights of the queens (queens are sometimes lost) under the vigorous weather conditions of the district seem to have conduced to the development of hardiness.

British goldens differ from American goldens in being more mobile when smoked, and easier shaken off the combs, qualities in which English blacks differ from Italians.

The breed has proved especially valuable for crossing with the English black bee. Colonies headed by British golden queens mated by black drones are more vigorous, build up faster and earlier in the spring, and produce larger yields of honey than ordinary black bees. The workers are considerably larger than pure British goldens, and slightly larger than blacks. To some extent these desirable results are attributable to crossing *per se*. I believe that the value of a new breed lies chiefly in the merits it shows when crossed with the local bee, because it is not practicable for the honey-producer to keep any pure variety except the local one, unless he buys all his queens.

Dover, England.

What to Do With the Surplus

BY G. M. DOOLITTLE.

"Having the supers of sections all off the hives, what course do you pursue immediately afterward?" is a question which is frequently asked me. My honey-room is in a building covered with paper roofing, the same being painted with a coat of black dressing, prepared purposely for such roofing. The sides of this building are painted dark red, so that wherever the rays of the sun strike the building, they are immediately absorbed, which makes the inside very dry and warm, just right for the evaporation of honey in all unsealed cells, and from this dry heat the honey gets of a thicker and better consistency the longer it stays in the room up to the time the late fall and winter storms come, which shuts off the sunshine.

That this warm, dry air may circulate all about every individual section, the supers are set on 2-inch blocks at each of the 4 corners, piling them up as high with these blocks between each super as the room will conveniently allow.

Thus they are left until it is time to prepare the honey for market, which is from the middle of September to Oct. 10, according to my way of thinking. Of late, we have been told to get our honey on the market early, but I consider the middle of October as plenty early. From experience covering more than 40 years, and the footing up of what my sales have been, and then striking an average, I find that the best prices have been obtained between Oct. 20 and Nov. 10; especially so during the past 20 years. Forty years ago there used to be quite a call for honey during the holidays, but that seems to be a thing of the past, as, at the present time, there is little demand during the latter half of December.

When the time comes to put the honey up for market, I open the supers and decide what sections are of a quality to go in XXXX, XXX, XX, and X grades. The 4 X is the very best, or what some style fancy, while the 3 X is very little inferior, except a slight discoloration of the cappings at the bottom of the sections. That styled 2 X may have some irregular combs, or those not so smooth, a few unsealed cells to the amount of 100 or so, and may be more badly discolored by what is known as "travel stain" than the 3 X. The one X takes in the remainder of the sections which are considered good enough to send to market at all. In order that I may not "lose sight" of what is to go in each grade, I place 2 or 3 sections of each grade where they are conspicuous, when a glance is sufficient to tell where each section belongs as it is taken from the super.

When enough sections of any one grade have accumulated to make a case, they are freed from propolis by scraping, packed in the case, the cover put on, and the gross and net weights stamped on each. Then they are piled up, each grade by itself, ready to be delivered to the railroad, or wherever we market them.

What shall be done with what we have left? Those partly full, but not enough so as to case, may be used in several ways. Those weighing from 7 ounces up, are readily salable in our home market, and if it be known that we have such on hand—if it is with others as it is in this locality—parties will call at the house and take all we have at a price of about three-fourths of what we get for the best. Or if we are willing to cut such combs out of the sections, thus saving to us the cost of the sections and their making, we can sell this for "chunk honey," for a cent or two above what we get for that last mentioned before. The selling of these sections (not quite good enough for marketing by the case) is something often hard to decide, for if we have a few of them, such sections are worth much more to us when kept for "baits" than we can get for the honey in them.

But if we have a large quantity of them, more than is needed for the purpose of starting the bees in the sections early the next season, then it will do to sell them as suggested. Or, if we wish, we can extract the honey from them and sell the extracted honey. I have often done this to advantage, as in this case I not only turn the honey into cash, but have the sections ready for baits as well. Some seem to think that it is a great job to extract the honey from such partly-filled sections, but when you once know how it is best done, this "job" mostly disappears.

Make two light frames, which will hold the greatest number of sections that the extractor reel will take. Now, when a day sufficiently warm comes, one when the sun has produced a heat inside the honey-room of from 90 to 100 degrees, fill these frames with sections, and uncap whatever portion of them that may be sealed, set the two frames thus prepared in the extractor, and, presto, you have the honey out the same as you would in a hot summer day when doing the extracting from upper stories. It is necessary to use a little more care in turning the extractor, as the combs in the sections do not come out so as to touch the reel, as is the case with combs in the frames, and if you turn too hard or fast, the combs may be partially loosened from the sections. After a little practice the right speed will be acquired, after which no further trouble will be experienced.

Then there is another way of using these partly-filled sections, which I often think is of still greater value, which is allowing the bees to remove the honey and use it for themselves. If the bees are allowed to remove it from the combs, such honey has a substantial value to them, especially if done at a proper time in the spring; this proper time being a week or so before the fruit-trees blossom. In this way, brood-rearing is advanced that much, and the queen has become so prolific that what comes from the fruit-bloom incites to a still greater activity, resulting in the combs being filled with brood; the field-bees will arrive on the stage of action at just the right time to take advantage of the nectar-yield from white and alsike clovers.

Some have held that such combs should be cleaned out by the bees in the fall to prevent the candying of honey afterward deposited in them, but from years of trying, first one and then the other, together with a part one way and the rest the other, I can only come to the conclusion that such is a mistaken idea. These combs, no matter how free from honey, are used as "baits," generally 12 in the first super put on each hive. Baits are used for coaxing the bees into the supers sooner to receive the first honey of the season, as it has been found that bees will often deposit considerable honey in drawn comb in the supers before circumstances are conducive to their drawing out foundation or building comb there.

Borodino, N. Y.

Bee-Keeping in Northern Idaho

BY GEORGE W. YORK.

By "Northern Idaho," I mean the panhandle of the State, or Bonner county, which is about 50 miles wide, lying between the States of Montana and Washington, and about 70 miles north and south, extending to the Canadian boundary line.

I have now lived in Northern Idaho a little over two months, and have made enquiry as to the probable number of bee-keepers here, and also the total number of colonies of bees. From my investigations and enquiries I doubt if there are 300 colonies in the county, and perhaps not over 20 bee-keepers.

I have visited what are probab'y two of the largest apiaries in the county, each containing between 40 and 50 colonies. One of them belongs to a Mr. Carter, who came from Michigan a few years ago. He is about 10 miles north of Sandpoint. The other apiary, shown herewith, is located about 10 miles south of Sandpoint.

Mr. Carter informed me that he has had as much as 240 pounds of extracted honey per colony, his probable average being about half that amount.

Some of the principal sources of nectar and pollen during the season are these: Pussy-willow, dandelion, white and alsike clovers, fireweed or willow-herb, arrow-wood, buckbrush and golden-rod.

The apiary south of Sandpoint, to which I have referred, belongs to Mr. Charles Burke, who also came from Michigan about 5 years ago. His apiary is located at probably the highest altitude of any apiary in the county. It is away up on the mountain side, and from its high elevation can be seen, 10 miles to the north, the city of Sandpoint and also Lake Pend d'Oreille (pronounced as if spelled *Pond-o-ray*.)

You may know that Mr. Burke's apiary is "up in the world," for in order to see the distant city and lake from where the bees are located, it is necessary to look over many other mountains of considerable height.

Mr. Burke uses the 10-frame double-wall hive. He at first worked his bees for comb honey, and harvested 310 pounds from one colony; but later he changed to extracted honey, and in 1911 averaged about 100 pounds per colony. This is an exceptionally good yield in view of the general report that 1911 was perhaps the poorest honey-year on record.

Mr. George W. York, Former Editor of the American Bee Journal—He is Now Located at Sandpoint, Idaho.

My impression, gained after riding by railroad train and by horse and buggy over about half of this county, is that it is an almost ideal place to keep bees. The nectar seasons are long, and the nectar-sources are seemingly unlimited. White and alsike clovers grow here like weeds in the East. Then there is much burned-over logged-off land where the willow-herb flourishes from early July to late frosts. Michigan bee-keepers know how abundantly willow herb yields nectar, and the large crops gathered from it.

I estimate that in this county alone there are nearly 2,000,000 acres of land. And if there are not ovar 500 colonies within the county, it will readily be seen that there is not much danger of overstocking this field with bees right away.

As to shipping facilities, this county is the best supplied of any county in Idaho. Two trans-continental railroads (the Great Northern and the Canadian Pacific—or Spokane International) traverse it from northeast to southwest, and the Northern Pacific railroad from east to west. So there is ample outlet for all the honey or other crops that can be produced here.

I may say that this is the greatest

country on earth for the growing of all kinds of grasses, fruits, and root-crops. And it is the finest dairy country imaginable; and when the dairymen and the bee-keepers once become established here, the land of Canaan won't be "in it" for "a land flowing with milk and honey." It is also excellent for poultry.

After "looking the ground over" pretty thoroughly, it seems to me that what this new and undeveloped country (Bonner county) needs is more people who have some financial capital to come into it, and also a willingness to work, and ability to do something. It is a poor place for the day-laborer—the man who expects to work for others at so much per day. There is a surplus of that class here already. Practically all who come here should be able to buy 5, 10 or 20 acres of the new and highly-productive land, make a substantial initial payment thereon, then "get busy" and put up the necessary temporary buildings, pitch in to *grow things*, and thus get ahead. One man whom I know here, from only one acre, sold $75 worth of garden-truck every month last summer. There is a good market here for practically everything that can be produced on the land.

Mrs. York and the Beautiful Vine-Covered Home of the Yorks in Idaho.

I send you also a picture of my own little apiary, which I have started since I arrived. I have 5 colonies now, but only show 4 in the picture. I also enclose a picture of my home with Mrs. York in the buggy.

We have a good garden, with peas, beans, rhubarb, currants, gooseberries, strawberries, raspberries, a large patch of potatoes, and over 40 fruit-trees of bearing age (6 years), such as apples, pears, cherries, prunes and plums. You ought to see some of the apple trees—how loaded they are. I must thin them out or they will break the trees down. And the plums and prunes are overloaded, also. This is a great fruit country.

My bees were all small nuclei, so I don't expect much honey this year. Still, if the season is as long here as I am told, I may get quite a little. I had to get a start from Washington, at a place over 300 miles west of Sandpoint. Quite a number have spoken to me about wanting bees next spring. I hope to be able to supply them at that time.

We have had fine weather all summer so far, excepting perhaps a little too much rain, which we are assured by the "oldest inhabitant" is quite *unusual*. During July, August, and part of September, it is not the usual thing here to have much if any rain. But it makes fine growing weather. No irrigation necessary here.

This is the greatest grass country I ever saw. Timothy 3 and 4 feet high, alsike and red clovers 2 and 3 feet high, etc. All grain except corn does well here. Nights are too cool for corn.

But I must not go on, else some may think I am another Western land-boomer. I have no land for sale. I simply desire to give something concerning this part of our great country that may be of general interest to the readers of the old American Bee Journal

Sandpoint, Idaho.

Methods of Destroying Moth and Wax Worms

BY FRANK F. FRANCE.

In the June number of the American Bee Journal I notice a paragraph on "What to do with wax-worms." Here are two ways I keep moth-worms from combs:

At the end of the extracting season, instead of placing the combs back on the hives to be cleaned, I put 8 combs in a 10-frame super, so that the combs are well apart. I then stack one super on top of another, making a stack of 8 supers. All this is in a good shed or house. To make the supers perfectly tight, I fold up newspapers and put under the edges of all. On the top and bottom of the piles I put a full newspaper and a good cover over that. The bee-moth, if it happens to get in the combs (wet, sticky combs) through some unknown place, will be stuck fast as on tanglefoot fly-paper, or will be daubed so that it cannot live. I have kept lots of combs this way without a moth-worm.

One season the web-worms were very bad on some of our forest trees, and one day I took one of these webs and placed it in a box that was seemingly air-tight. In this box I placed 4 or 5 moth-balls, such as you buy at drug-stores. In about 12 hours I examined the box and found every worm in the web dead on the bottom of the box.

The experiment proved good, and suggested a similar action on combs with moth-worms. This I tried, and it worked the same way, but to make doubly sure of the job, I put some bisulphide of carbon in a thin cover and placed it over the combs for 12 hours or more. At the end of this time the combs were placed in racks in the comb-room, with a moth-ball here and there for safety. This comb-room has not had a moth since the trial, and I believe I will hereafter continue on this idea.

Platteville, Wis.

DR. MILLER'S ANSWERS~

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Interesting Experience With Poor Laying Queens and Queenlessness

I have a colony of bees which seemed to have a poor queen at the beginning of the harvest, but I put on a comb-honey super, thinking I would kill the queen later and let the bees requeen themselves from their own brood. A few days ago I moved the hive from its stand and put an empty one in its place, with a strip of perforated zinc nailed across the entrance. Then I shook the bees off the combs in front of the empty hive, and put the combs, after shaking, in it. To my surprise there was no brood sealed or unsealed in any of the combs. There was a fair sized colony of bees.

The second day after, I gave the bees a comb with eggs and unsealed larvæ from another colony. Three days after this was done, I found that the bees had not started queen-cells. There was not much honey coming in at this time, but there was considerable in the hive and a super half full on top. What was the matter, and in what way would you proceed to requeen this colony?

The story I told you the other day about a colony of bees that I tried to requeen has a sequel. Today, July 20, I looked into the hive and found two or three combs with some sealed brood and considerable unsealed brood in them. The colony had not swarmed, and there were no queen-cells or remains of queen-cells to show that any attempt had been made at supersedure.

The case puzzles me. The queen was an old one. Will queens sometimes suspend egg-laying until all brood is matured and then begin laying again? My impression is that the work going on in the hive now is that of a young queen. What is true of this colony is true of another treated in the same way at the same time. The old queens were not found, but zinc was left at the entrances so they could not possibly go back into the hives. I feel quite sure they had died before I attempted their removal. Suppose the old queens were dead, and that the bees were hopelessly queenless, and that they would not start queen-cells from brood given them for the purpose, in such a case how would you proceed to requeen?

IOWA.

ANSWER.—Pity we haven't exact dates for everything. Still it might not help. I can only make a guess in the case, and any guess that I make would likely occur to a seasoned bee-keeper like yourself. The most plausible guess that occurs to me is that a young queen from some other hive returned from her wedding-trip and entered the hive in question. The thing sometimes happens, and she might be kindly received in a queenless colony. But it is not entirely clear that there was a free entrance for such a queen, for at least part of the time you had excluder zinc at the entrance.

Bees do strange things, but it is not very likely that a queen takes a vacation at laying while honey is yielding.

In case of a hopelessly queenless colony that would not even start cells, I think I should resort to the newspaper business. Put a newspaper over the queenless colony, and over that set a hive-body into which you will put a nucleus with a queen. A mere body-guard of bees with the queen might be sufficient. As soon as the bees gnaw a passage through the paper, bees from below will gradually join the queen, and in three or four days queen and bees can be moved to the lower story.

Giving Up a Position of $100 a Month for Bee-Keeping

I have been trying to decide on a move for several years; that is, in the keeping of bees. I had a slight experience of 2 years with bees, but just became greatly interested in them when I left the country to accept a position in the Postal Department in New York city. I still hold such a position, but my desire and love for bees has increased so much that I am contemplating a change to the country. My hestitation comes from the doubt whether I could make a good living from them alone should I devote my entire time to them. What is your candid opinion? Would it be a wise and profitable step to take, to give up my position of $100 a month to lurch into bee-keeping?

I would not go in extensively at the start, but try and feel my way as I advance. Will you kindly give me the advice I seek as to whether there is a profitable field in the keeping of bees as a business proposition?

NEW YORK.

ANSWER.—Your question is one that is exceedingly difficult to answer. If it be a mere matter of dollars and cents, I should say that bee-keeping is a good business to let alone, for the same amount of brains and energy that will make you a living at bee-keeping will make more than a living at almost any other business. But if you have the great love for bee-keeping that some men have, then if you can barely make enough to warrant you a moderate living during the remainder of your life, it may be the part of wisdom for you to choose bee-keeping in preference to any other business that would net you ten times as much money. For your true bee keeper doesn't have to wait until he has made his pile before he begins to enjoy life, but every day is a vacation day, and a day of enjoyment. But you *must* have a living. Can you make a living at bee-keeping? I don't know. There are a few who make a living at bee-keeping alone. There are probably a few who can. You may be one of them, and you may not.

It would not be advisable for you to cut loose from everything else and start in at bee-keeping with the idea of making a living at it from the very start. If you have enough ahead so that you can afford to do nothing for a year or two, with a fair assurance that you could again take up your old line of work at the end of the year or two, if you should so elect, then all right. For you must count it among the possibilities that the next two years may be years of failure in the honey harvest.

If you can not take such a risk, perhaps you can grow into quite a business with bees while still continuing at your present business. Indeed, that might be the best way. In a suburban home you could probably care for 25 or 50 colonies mornings and evenings. Or, you might have a roof apiary in the city. The profit from them would be all the while bringing you nearer to the point when you could cut loose from everything else. After a year or two you could judge better than any one else whether it would be feasible and advisable to try bee-keeping alone.

Cross Bees—Swarms—Stingless Bees—Miscellaneous Questions

1. I have a colony of bees that are very cross. I took a super of honey from them, and in the operation killed a number of bees, and now they seem to be worse than ever. What shall I do for it?

2. A few days ago one of my colonies swarmed, and was hived in the usual way. About an hour afterward another colony swarmed, and before I could get my veil on they began clustering on the hive in which I had hived a swarm before. (Nearly all of them being about the entrance.) I brushed them off as quickly as possible on the ground, thinking they would cluster in a tree, and set the hive about a rod away to prevent them from going into it. I then took my smoker and tried to find the queen, but failed. I then found that they had discovered the hive, and were going into it. I tried to find the queen as she was going in, but failed. I took an empty hive and set it in front of this one, thinking they would go into it. Some of them did. I then thought I could do nothing more with them, so I went off and left them. When I returned in an hour or so both swarms were gone. The question is, why did this swarm cluster on and go into this hive?

3. One of my colonies has built three combs in the back part of the hive crosswise of the frames instead of lengthwise. I would like to get them straight. When is the best time of the year to do this, and how shall I do it?

4. Will bees eat candied honey? Is it all right to feed it to them?

5. Is there any difference between an Italian queen, golden Italian, and red clover Italian? If there is, what is it?

6. Have honey-bees ever been known to work on red clover?

7. I have read somewhere about a stingless bee. Is there such a bee?

WASHINGTON.

ANSWERS.—1. Sometimes a colony will be cross with apparently no sufficient excuse for it, and then a little later appear all right. In such a case give them careful treatment, using smoke judiciously, and do as little as possible to anger them. Do not use smoke more than needed, but be sure to use when needed, or a little before needed. Give them a little to start with, and if they show fight give them more afterward. But if a colony is chronically ill-tempered, the only remedy is to pinch the queen's head and give them a queen of better-natured stock.

2. Not much guessing is needed. When a swarm is in the air it is a common thing for them to be attracted by the call that is made at any hive where another swarm has just been entering, and it is wonderful how they will follow that call. Once when a swarm was thus entering a wrong hive, I put the hive on the wheelbarrow and started traveling with it. So long as I kept on the move all was well, but the minute I stopped, no matter where I was, the bees heard the call and promptly assembled in response to it. I don't remember how it came out.

3. A good time is in the spring when not much honey is in the hive. Not too early, for they do not build comb and make repairs so early, but after they start well at brood-rearing, before they begin storing. Since only three combs have gone wrong, you can lift out the other frames until you come to them. Then cut away any attachments necessary to get out the faulty combs. If they are bent only a little out of place, you may be able to force them into their proper frames, and if too straight across you must cut them out and then you may be able to patch them into the frames, tying strings around them, which strings the bees will in time gnaw away if you do not take them out yourself.

4. Yes, only sometimes they waste it by throwing out the grains if you do not moisten it.

5. Yes, there is the difference indicated by the names. Goldens are those which have been bred by selection in this country until they are yellow to the tip, or nearly so.

6. Oh, yes, I've seen them. Sometimes the corollas of the blossoms are shorter than usual, and at such times the ordinary bee can reach the nectar.

7. Stingless bees are found in South America, but are of no value commercially.

Bees Hanging Out—Remedy

This is what we call a dry year here. I am in the southeastern part of Alameda Co., Calif. Last summer I observed something that puzzled me. As I was walking among the bees I discovered a colony hanging out; quite a big bunch. I looked in the super, and there was hardly a bee in it. I got some blocks and raised the hive up all around about half an inch, and concluded I would give them a super the next day with an abundance of unfinished bait. Well, when I came the next day with my extra super, to my astonishment every section was full of bees, and along the center of the super the sections were half drawn out. Why did they not go into the super before I raised them up?

CALIFORNIA.

ANSWER.—It looks as if you made the right guess yourself, when you raised the hive on blocks. The bees had been driven out by the heat, and when sufficiently cooled off they went back into the super.

Queen Deformed When Hatched

Can you give me the cause for a young Italian queen hatching with only a part of a wing?

TEXAS.

ANSWER.—Insufficient nourishment or a slight chilling, which may occur in a weak colony. Even in a strong colony a cell on the lower edge of a comb might be chilled on a very cold night. It has been said that letting a queen-cell fall, or shaking it might result in crippled legs or wings.

Is Not the Life of a Bee More than Six Weeks During the Honey-Flow?

Are you sure that the life of a bee is only six weeks during the honey-flow? I have a case in point that proves to me that the life of a bee must be much longer. June 13, one of my best colonies cast a swarm from a 2-story hive (16 Hoffman frames), and I hived the bees on the old stand in an 8-frame hive of old combs, with an excluder and 4 comb supers on top.

The ninth day they swarmed out and I returned them. Thinking perhaps more room was needed, I put on 2 more supers, making 6 in all. They again swarmed out and I returned them, only to have the performance repeated, until June 27 (just 14 days) they had swarmed and been returned five times. By this time the queen had 6 frames well filled with brood, and as they had some very fine queen-cells started, I removed the hive-body and returned the bees to the same place in another hive of empty combs.

Now you will please note that this was 14 days after the first swarming, and if the queen commenced laying the same day it would be 35 days from the first date, June 13, before there could possibly be a single young bee, but as they swarmed out again June 28, I assume that the queen had not yet commenced to lay. I immediately returned them, and I think they were completely cured, as they have remained in the hive up to the present.

Today (July 22) is 39 days since the swarm first issued, and granting that a portion of the bees that had just hatched that day were in the swarm, the *very youngest* of them would be 39 days old today, while the vast majority would necessarily have to be from several days to several weeks older.

Now, today, those bees are working without any apparent decrease in numbers or efficiency, and those 6 supers are full with the exception of a very few sections which still lack the finishing touches. Now, according to our best authorities, this colony should be reduced to practically nothing, and in 3 more days should be completely dead, barring the young brood which is supposed to be hatching now, and only a few of which would be old enough to fly by that time. Do some queens produce longer-lived bees than others?

We are having quite a good flow from clover this year, and the honey is as white and fine as any I ever saw in my life. Basswood bloomed *very* profusely, but the bees did not work on it much.

INDIANA.

ANSWER.—Beginning at the tail-end of your letter, I suppose there is no doubt a decided difference in the longevity of bees. It is a matter of no small importance, and if by selection we can secure a strain of bees that live but a day or two longer than usual there will be a decided gain, provided dhat a day or two be added to their storing tays, and not to the time spent as nurse-bees. If you have such a strain of bees you are fortunate. It certainly looks a little that way. And yet I'm not so sure that we have established that the average lives of your bees is more than six weeks. You say "without any apparent decrease in numbers." It would be more satisfactory if we could have the actual count then and now, for a look at them now with only the recollection of a few weeks ago for comparison is not the most reliable thing in the world. Then there's another thing. Those bees were not in a normal condition. We know that work makes a big difference in the lives of bees. In the winter they live several times as long as in summer. If work makes so much difference it is quite possible that there is a further difference depending upon the kind of work. May not nurse-work be much harder on them than field-work? A lot of those bees of yours did not do their regular "stunt" of nurse-work, and their lives may have been lengthened accordingly.

The fair way is to take bees under normal conditions. To a colony having a black queen give an Italian queen, allowing all work to go on regularly, and then see how long it will be until the blacks have disappeared. This has been done many times, and I think in no case has the average life run beyond about six weeks. If it has in your case it is exceptional.

Carrying Nuclei Over Winter—Amount of Honey Necessary

1. In the spring I had one colony of blacks in a modern hive, and 2 in home-made hives. I transferred the latter, and got 3 fine Italian queens from a reliable breeder. I have reared 10 queens. I want to take as many queens through the winter as possible. How can this be done under the following circumstances: Honey comes in up to the latter part of October, and begins early in March.

2. I have several hives which hold 3 nuclei of 3 regular-sized frames each. About how much honey will it take for each?

3. If it takes 30 pounds of honey for a 10-frame hive, can we be safe in allowing 3 pounds to each comb of bees, *i. e.*, 9 pounds for 3 combs, 12 pounds for 4 combs, etc.?

4. What is the least number of frames, well filled with bees this is the only way I know how to estimate) and honey will it take to go safely and profitably through the winter?

5. Poplar blooms about May 10, linden about June 10, so we must be ready for surplus by May 1. Can I expect a 2, 3 or 4 frame nucleus this fall to be ready to store by May 1? KENTUCKY.

ANSWERS.—1. There will be no trouble as to rearing almost any number of queens, so the question resolves itself into finding out the least number of bees that will bring a queen safely through the winter. You will accomplish that by assembling several nuclei in the same hive. You have already had in the same hive 3 nuclei of 3 frames each. It is possible that four 2-frame nuclei will do all right. A 10-frame hive having an inside width of 14½ inches would allow 3 compartments each 3 inches wide, and a fourth compartment of 4⅜ inches in which you could have a 3-frame nucleus. This is on the supposition that your 3 partitions are made of ⅜ stuff. These 4 nuclei well stocked with bees would likely go through all right in your Kentucky climate. But the three 3-frame nuclei might be safer.

2. May be 12 pounds.

3. No. If it takes 3 pounds for each of the 10 frames when they are snugly crowded together, any spreading apart will make more honey needed. It is the outside of a cluster that is hard to keep warm, and when you put in division-boards you are to some extent making additional outsides. If you need 30 pounds for 10 frames, and then put in 2 division-boards and 9 frames, I think the 9 will need more honey instead of less than the 10 did. And the more divisions you put in the more honey per frame must be figured.

4. From what has already been said you will see that I would estimate 2 frames to the nucleus, with just a little question whether 3 frames might not be better.

5. I should guess that a 4-frame nucleus might, or even a 3-frame if well crowded with young bees. But I'm not the best guesser in the world.

Inquiry from Japan, What Kind of Bees are Best?

I would be glad to know what kind of bees are best for section or extracted honey, goldens, 3-banded Italians or Carniolans?

Can you kindly supply me with golden Italian and 3-banded queens this autumn? JAPAN.

ANSWER.—All things considered you can hardly do better than to choose the 3-banded Italians for either comb or extracted honey. Some say they do not seal comb honey so white as they should, but I have not been troubled in that way. There is no doubt a difference in different strains. Black bees have the very best reputation for making white combs, but the blackest bees I ever had made the darkest sections. They were, however, Tunisians from Africa, and not the common blacks.

I cannot supply you with the bees you desire, as I rear bees only for my own use.

Purifying Beeswax

Please tell me how I can purify beeswax. I can melt it and get it out of the combs by the hot-water process, but after I get it melted I cannot get the dirt separated from the wax, as underneath the wax there is some kind of fine dirt; that is, the dirt does not settle to the bottom of the vessel that the water and beeswax are in. I would like to know some way to get this dirt out of the wax, and will you please give me a way to mould the beeswax into one or two pound blocks. I have read many bee papers and books, but I cannot find anything about purifying beeswax. OREGON.

ANSWER.—Your wax is only following the general rule A large part of the impurities, while heavier than wax are lighter than water, so they settle between the water and the wax. In other words, you will find a layer of sediment on the under surface of the cake of wax when it cools. There is not very much difference between the weight of the wax and the sediment, so that it takes it a long time to settle. So if the wax cools very rapidly much of the sediment will be mixed up with it. Your effort must be to keep the wax in the liquid state a long time; or, as it is often expressed, you must let the wax cool slowly. One way to do this is to cover up warm with blankets or something of the kind. If the amount of wax is small, it will be longer cooling if you have a good deal of water under it. Another way, with a small amount, is to put it in the oven of the cook-stove, leaving the oven-door open until the fire begins to die down in the evening, then shut the door and leave it until morning. Put the stove-handle in the oven, and then in the morning you will not forget to take out the wax before building the fire.

Then you will scrape off the dirt from the bottom of the cake, which you can do more easily while the cake is a little warm. With a large amount of such scrapings it may be worth while to melt the whole of it to get out the littte wax in it, but with a small amount it is not worth the trouble.

Giving Queen-Cells to Nuclei—Bi-sulphide of Carbon

1. Desiring to start a new colony, I did exactly as you advised in May issue, page 150—"A little variation," etc.—with only the one difference that I left the nucleus on top of the other hive 2 or 3 days longer than you advised. I did not succeed. Is that the reason? Possibly the queen, on emerging, was detained from her mating flight, or squeezed through the excluder and got killed downstairs. I think I put two queen-cells in protectors, deeming that two would be better

2. About treating brood-frames full of honey with bi-sulphide of carbon, after removing the same from the hive, what about the danger of enough of the scent remaining so that later, when feeding it back, the bees object to it. In doing this I had 2 colonies act queerly. BEE-KEEPER.

ANSWERS.—1. Perhaps I was not explicit enough. I intended to instruct that the queen-cell should be given at the time the nucleus was formed, *after* the brood had been in an upper story for a week. If that had been done it would probably not have done any harm to leave the brood in the upper story 2 or 3 days longer. If you put a ripe queen-cell into such an upper story, you would be likely to fail in the majority of cases. The queen would likely hatch out all right, and might continue unmolested until the time for her wedding flight, when her frantic efforts to get out might induce the bees to ball her. Of course, there would be a gain in time by putting the cell in the upper story in advance of putting the nucleus on its own stand, but in that case it would be safer not to leave the brood in the upper story even so long as a week. Three days would be safer.

I don't suppose putting in the two cells did any harm.

2. I never tried giving back to the bees frames that had been fumigated with bi-sulphide of carbon, until they had been out of the hive a good many days; but I should not have supposed it would take more than 3 or 4 days to air the combs sufficiently. But that may be a wrong view. If you have any definite proof in the case it may be useful.

REPORTS AND EXPERIENCES

Bee-Papers Necessary in Bee-Business

I have been taking bee-papers ever since I was 14 years old, and I am 28 now. I am taking all the papers, and have almost all the books, and still I do not have enough to read on bees. I have been keeping bees for myself the last 8 years. I would have been out of the bee-business if it hadn't been for the papers and books. I have never made less than double my expenses, and have increased from 5 colonies to 175; have bought all dovetailed hives, and built a good honey-house in the 8 years. I have full sheets of foundation in all the hives, getting breeder-queens, queen-rearing outfit, and mating hives, but I could not have done it without the bee-papers. If I only had one colony of bees I would want the bee-papers. If a man hasn't time to read a bee-paper he isn't a bee-keeper, and never will be.

I have put a lot of money in good Italian breeding queens. I am always looking for something better in the line of bees, and I am getting results. But I couldn't have done it without the bee-papers.

I am getting pleasure and happiness, big honey crops, and better profit by taking bee-papers, so why doesn't it pay? If I hadn't taken any bee-papers I would have today one or two colonies of black bees in box hives, and lost all the pleasure and profit.

Erie Co., N. Y. EMIL W. GUTEKUNST.

Increased from 2 Colonies to 7

I had 2 colonies last fall, and they came through the winter in fine shape. I made 3 nuclei from the strongest colony, and they each cast a prime swarm, so that I have 7 in all.

I think they are just the common bee. They have one band of yellow, and the rest is mostly black, and when the workers get old their bodies are nearly black and glossy. I thought I would requeen with a good grade of Italian stock while my apiary was small, and protect myself against foul brood and the bee-moth. GEO. H. ELSKAMP.

Maurice, Iowa.

Bad Stores Caused Heavy Loss in Wisconsin

We have had a hard winter and spring, and a heavy loss in bees. "Minnesota" asked on page 181 of the American Bee Journal for June, "Why the bees died?" Now, my bees had plenty of honey, and so did many others

I looked through several yards and found the same condition Nearly all the honey was granulated, and bees cleaned out every bit of pollen and daubed their hives badly, it being of a dark color. Some of the bees starved to death with honey in their hives; others dwindled after being put out in the spring, so I concluded it was in the honey gathered last fall, and perhaps the pollen was not right. Plenty of clover, but no yield. Basswood is fair. F. C. SMITH.
Plum City, Wis., July 15.

Gross Returns from One Colony $52

Before coming to Oregon I lived for a number of years in Maywood, a suburb of Chicago, where I kept a few colonies of bees. One hive was kept in the basement of my house the year around, sitting on an elevated platform just inside of a west window. During cool weather, and in the winter, a covered passage-way the full width of the hive-entrance led to a corresponding slot sawed in the bottom rail of the window, while, during the warm months, the window was removed entirely.

This arrangement maintained a very uniform temperature at all times, and the colony thrived amazingly. The last season I lived on the place this colony commenced rearing brood in March. An examination on a warm day the latter part of the month, disclosed three patches of capped brood several inches in diameter in the center of the hive. During apple-blossom and dandelion time they filled up all available space in the hive, and filled one 24-section super with yellow honey which was very bitter.

Although the queen was clipped, the colony swarmed out in June, just at the time the sweet clover began to bloom. They clustered on a small tree in the yard, and it was the largest swarm I ever saw. During their absence I pulled the old hive from its stand and replaced it with a new one filled with 10 extracted combs saved over from the previous year, picked up the queen, which was crawling on the ground in front of the window, and was ready for the return of the family. When they commenced to return to the hive, I had to pile on three supers in order to allow them all to enter the hive That was on Thursday. On the second following Saturday, 10 days after the swarm issued, the three supers of sections were completed and two others well under way.

I took off one or two supers each Saturday from that time until I had taken off 10 supers, or 240 sections, and they were so well filled that when sold to a local groceryman they weighed above 230 pounds, net. As the hive was still boiling over with bees, I replaced the supers with a hive of extracting combs, which were completely filled once and partially filled again, giving in all 140 pounds of extracted honey as a sort of follow crop.

The sale of the honey, comb and extracted, brought in $44.50,-all sold locally. The old hive was placed in the yard, one cell allowed to hatch a new queen, and by fall they were so strong and vigorous that I sold the colony to the local station agent for $7.50, delivered in his yard. That made a total of $52 as the gross returns from the one colony.

A neighbor of mine in Maywood, Stoughton Cooley, reported a crop of 356 pounds from one colony the same summer, but as to its cash returns, or what part of it, if any, was comb honey, I cannot now recollect.

Bees are not a pronounced success in this part of Oregon, from the fact that our nights are too cold, and too much time is lost early in the season on account of wet days East of the Cascades, however, in the alfalfa section, they are very profitable and turn off enormous crops. G. S. CREGO.
Portland, Oreg., July 18.

[The foregoing is a fine illustration of what may be done under the most favorable circumstances.—C. C. MILLER]

Idaho Has Ear-Marks of a Bee-Country

I am not settled yet for sure. But right here this country has the ear-marks of a bee-country, and it is settled up with people any one must like. L. W. BENSON.
Rupert, Idaho, July 11.

New Hampshire Reports Fair Crop

White honey season is about over, and a very good crop was gotten. Bees were very light up to June 15. I increased from 30 to 51, and secured 1500 pounds of honey; goldenrod is yet to come. Winter losses were very heavy in this part. EDGAR RICARD.
Canaan, N. H., July 31.

California Outlook Still Poor

FIRST LETTER.

Our honey season is a total failure so far, The last two honey-plants are now coming on with very little secretion. The same condition exists along the Coast as far at least as Santa Barbara. Alfalfa is the only resource. GEO. F. MERRIAM.
San Marcos, Calif., July 6.

SECOND LETTER.

We had 10 days, July 10 to 20, that our bees filled their hives pretty well, but on the 20th it all stopped and the season ended. There will be some honey sold, but no white, and not much anyway. GEO. F. MERRIAM.
San Marcos, Calif., July 26.

1911 and 1912 Honey Crop Compared

My report for 1911 is 103 pounds of extracted honey from 33 colonies, and for 1912, up to date, 800 pounds from 9 colonies.

Last winter was a hard one on bees wintered on the summer stands. I saved only 9 out of 32. FRED BECHLY.
Searsboro, Iowa, July 25.

Another Report from Iowa

My bees are doing fine this year. I think I will get the largest crop of honey I ever got in one year. REV. JOS. DREXLER.
Norway, Iowa, Aug. 1.

Dry Report from Kansas

It is very hot and dry here; pastures are dry enough to burn. We need rain badly. Bees are at a stand still. J. J. MEASER.
Hutchinson, Kan., July 13.

Texas Crop Short But Prices High

Our honey crop is very short, and taking the State over, there is less than a third of a crop. Demand is good, and prices up 2 cents a pound. Letters from California bee-men show a very light crop there.

Our State Entomologist, with his band of able inspectors, is rapidly wiping foul brood out of the State. May the good work go on. GRANT ANDERSON.
San Benito, Tex., July 30.

Bees Doing Little in Western Iowa

Bees in this locality are not doing very well. It has been very cool and wet for the last 3 weeks; very little swarming. I have been feeding for the last 2 weeks.

There is very little in the fields for the bees. Winter losses were very heavy in this part of the country. J. B. ESPY.
Sioux City, Iowa, June 19.

Very Few Bees Left

Most of the bees in this section were destroyed last winter from bad honey, no honey, or cold and damp weather In this section I believe our bees also die for want of change in stock. GEO. M. HARTWICK.
Sadorus, Ill., June 17.

Finest Honey-Flow in 33 Years

We have had the finest honey-flow from white and sweet clover that I ever saw in my 33 years experience as a bee keeper. Almost all of my hives are 4 and 5 stories high, and full of the finest honey that it is possible to produce. J. P. MOORE.
Morgan, Ky., July 6.

MOUNTAIN APIARY OF MR. CHAS. BURKE, THE LARGEST BEE-KEEPER IN BONNER COUNTY NORTHERN IDAHO.— See page 276.

FAMOUS QUEENS DIRECTLY from ITALY
BEES MORE BEAUTIFUL, MORE GENTLE, MORE INDUSTRIOUS, THE BEST HONEY-GATHERERS

Universal Exposition, St. Louis, Mo., 1904, highest award.

Extra Breeding Queens, $3; Selected, $2; young, fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write **Anthony Biaggi,** Pedeville, near Bellinzona, Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

HARTFORD, CONN., April 20, 1907.

Dear Sir:—Please find enclosed Post-office money order for $11, for six queens. Hope I shall get as good ones as I received before. If I do, shall want more. Please send them as soon as possible. And oblige,
(Signed) A. W. YATES.

SPECIAL OFFER ON QUEENS

We have on hand about 200 tested Italian Queens that are one year old that we will offer at **60c each;** and in lots of 25 or more, **50c each.** These are very choice Queens, and we will **guarantee** them to give good service for two more seasons. This **adv.** will **not** appear again, so order at once.

FRED LEININGER & SON
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Please mention Am. Bee Journal when writing.

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BEES AND QUEENS.

FINE ITALIAN QUEENS, untested, 70c each.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

NUTMEG ITALIAN QUEENS, leather color, after June 1, $1.00. A. W. Yates, Hartford, Ct.

FOR SALE—Untested Golden Italian Queens 50c each. J. F. Michael,
8A2t Winchester, Ind.

FRONT LINE Italian Queens by return mail at 75c each, 6 for $4.25, 12 for $8.00, 25 and up 60c each. J. B. Hollopeter, Pentz, Pa.

VIRGINIA QUEENS now ready. Untested 75c Tested $1.00. All dead ones replaced.
6A3t S. Click, Mt. Jackson Va.

GOLDEN Italian Queens, Nuclei, and Full Colonies. See price-list in May number, page 131. Isaac F. Tillinghast, Factoryville, Pa.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
Robert Inghram, Sycamore, Pa.

FOR SALE—Three-banded Italian Queens bred for honey, gentleness, and prolificness. One, $1.00; 6 for $5.00. Wm. S. Barnett,
7A4t Barnett, Va.

HARDY, Northern-grown Queens of Moore's strain of Italians, ready for prompt shipment. Untested, $1.00; 6 for $5.00; 12 for $9.00. Less in lots of 50 or more.
P. B. Ramer, Harmony, Minn.

MY SYSTEM—Union bee-hive and Queen. Will increase both your colonies and honey crop, and improve your stock, making bee-keeping a real pleasure. Cash orders $10.00.
3Atf Joe Egner, Box 552, Lavergne, Ill.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.
7A4t J. B. Brockwell, Barnett, Va.

QUEENS—Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have. Frank M. Keith,
3Atf 83½ Florence St., Worcester, Mass.

NORTHERN BRED hardy Queens of Moore's strain of Italians, ready the last of June. Untested, $1.00 each; 6 for $5.00; 12 for $9.00. Orders filed and filled in turn. 6Atf
P. B. Ramer, Harmony, Minn.

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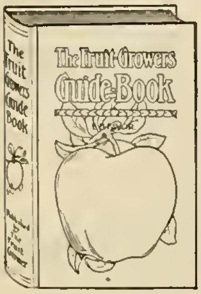

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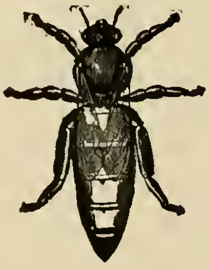

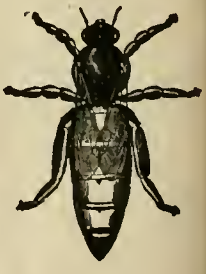

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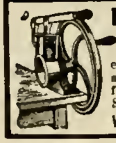

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W. D. SOPER, Jackson, Mich.
323 to 325 Park Ave., on L. S. & M. S. R. R.

We Make a Specialty of
Manufacturing
SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.

SWEET CLOVER SEED

for fall sowing, both yellow and white bloom; new crop now ready. Best legume fertilizer, good pasture and hay. Price and circular, how to grow it, **free.** Also Kentucky bluegrass seed. John A. Sheehan, Falmouth, Ky.

Please mention Am. Bee Journal when writing.

P-O-R-T-E-R
(Trade mark)

BEE-ESCAPE

SAVES { TIME HONEY MONEY } At All Dealers

Each, 15c.; Dozen, $1.65, postpaid.

If your Dealer does not keep them, order from Factory, with Complete Instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Ill.

Please mention Am. Bee Journal when writing.

AQUASUN

The flavor of richest apple cider.
A table delicacy that has no equal.
A beverage that refreshes and invigorates.
The strongest health-germs in Nature.

Made from Honey & Water

In any kitchen, at any hour, at a cost of 2 to 4 cents per gallon. Process and right to make it, 25c. Circular Free. 5A12t

C. W. Dayton, Chatsworth, Calif.

Please mention Am. Bee Journal when writing.

Mott's Strain of Italians—
Also Carniolans

10-page Descriptive List free. Untested, 75c each; $7.50 per doz. Natural R. C. Golden from Imported Stock. Sel. Untested, 90c each; Tested, $1.50. Bees by pound and Nuclei. Leaflets, "How to Introduce Queens," 15c each; on "Increase," 15c, or both for 25c.

E. E. MOTT, Glenwood, Mich.

"If goods are wanted quick, send to Pouder."

Bee-Supplies

Standard hives with latest improvements, Danzenbaker Hives, Sections, Foundation, Extractors, Smokers; in fact, everything used about the bees. My equipment, my stock of goods, the quality of my goods and my shipping facilities can not be excelled.

PAPER HONEY-JARS

Sample Mailed Free

For extracted honey. Made of heavy paper and paraffine coated, with tight seal. Every honey-producer will be interested. A descriptive circular free. Finest white clover honey on hand at all times. I buy beeswax. Catalog of supplies free.

WALTER S. POUDER, Indianapolis, Ind.

859 Massachusetts Avenue.

You Can Have the Cash

For your Comb & Extracted Honey or Beeswax, if you will send it to

WESTERN HONEY PRODUCERS, 520 West 7th Street., Sioux City, Iowa

Let them render your old combs into wax.

Protection Hives

The best and lowest-priced double-walled hive on the market. This hive has ⅞ material in the outer-wall, and is not cheaply constructed of ⅜ material, as some other hives on the market. Packing or dead-air space, as you prefer. Remember, winter is approaching. Get your bees into comfortable quarters before it is here. Send for a catalog.

A. G. WOODMAN CO., Grand Rapids, Mich.

Don't Worry About Robber Bees

BE SAFE AND USE THE

Schamu Patent Roller Entrance HIVE BOTTOM

It also keeps the colony warmer, and allows breeding up in early spring.
Allows feeding any time of day, even during a honey-dearth.
Controls the supply of drones, and insures the best mating of Queens.
Changes the amount of ventilation to suit the temperature.
Closes the entrance so as to allow moving.
Serves the purpose of drone-trap, feeder, bottom-board, entrance-block—and does the work infinitely better.

Makes Bee-Keeping Pleasant as well as **Profitable** for either amateur or professional.

Price, $1.50 f. o. b. Liverpool, N. Y.
Ask for descriptive booklet, and send all orders to

DR. CHAS. G. SCHAMU, Liverpool, N. Y.

Please mention Am. Bee Journal when writing.

OUR HAND-MOORE STRAIN

3-Band Italians

Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Breed strictly for business. Untested, 75c; 12 for $8.00; 50 for $25.00.

LATSHAW HONEY COMPANY,
CARLISLE, IND.

Please mention Am. Bee Journal when writing.

BEES FOR SALE

The following parties have bees in full colonics for sale:

Name.	Address.	No. Cols.
L. Werner,	Edwardsville, Ill.	50
Rev. A. J. Horner,	Youngsville, Pa.	55
Frank Gessner,	Forest Lake, Minn.	35
F. F. George,	Fraser, Idaho	20
Ralph Shaw,	Windsor Locks, Conn.	10

Please mention Am. Bee Journal when writing.

Famous Queens!

From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $7.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens—1-frame, $2 50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; $2x 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40.

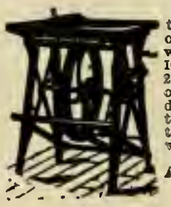
Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drone as well as the Queens.

We guarantee safe arrival and satisfaction.

D. E. BROTHERS,
2A9t **Jacksonville, Ark.**

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing

If YOU want them YELLOW try the GENTLE strains of Swarthmore PEDIGREED GOLDEN QUEENS.

AMERICAN GOLDEN-ALL-OVER QUEENS
P. C. SNYDER
Swarthmore
PENNA. U.S.A.

Swarthmore, Pa.

Please mention Am. Bee Journal when writing.

EVERY BEE-KEEPER KNOWS

The Worth of A Good Queen

Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

J. W. K. SHAW & CO.,
Loreauville, Iberia Parish, La.

Please mention Am. Bee Journal when writing.

English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

Please mention Am. Bee Journal when writing.

HONEY AND BEESWAX

CHICAGO, Aug. 21.—Comb honey has sold promptly upon arrival during the month, and up to this date there is none that has been on the market beyond the time necessary to get it in shape to sell. The price ranges from 17@18c per lb for No. 1 to fancy white. There has not been much enquiry for the amber grades, and practically none are offered. Extracted is without change, but is not active. For clover and basswood in the 60-lb. tin cans, sales are made at 9@10c per lb. Amber grades range at from 7@8c per lb. Beeswax remains unchanged at from 30@32c per lb. if free from sediment and other foreign matter.

R. A. BURNETT & CO.

KANSAS CITY, MO., Aug. 20.—The receipts of both comb and extracted honey are light, especially comb honey. We are selling our receipts of comb as fast as they arrive at quotations. We quote: No. 1 white comb, 24 section cases, $3.50; No. 2, $3 00@3.25; No. 1 amber, $3.25; No. 2, $3.00. Extracted, white, per lb., 8@8½c; amber per lb., 7@8c. Beeswax, per lb., 25@28c.

C. C. CLEMONS PRODUCE CO.

INDIANAPOLIS, Aug. 20.—Extracted honey of finest quality is selling at 10½@12c in 5-gallon cans, according to quantity at one shipment. No. 1 and fancy white comb is selling at 16@17c. Beeswax is in good demand, and producers are being paid 30c per pound.

WALTER S. POUDER.

SAN FRANCISCO, Aug. 15.—The demand for comb honey is still beyond the supply, and fancy and No. 1 still very limited, and what arrives is soon taken up. Extracted honey is somewhat easier, and several carloads have been upon the market, and the water white and lighter grades have found ready buyers. Fancy white comb, 16@17c; dark to amber, 13½@15c per lb.; river comb, 11@12½c per lb. Water-white extracted, 8@8½c; light amber, 7½@8c; amber, 6@7½c; lower grades, 5@6½c per lb. Beeswax, 27½@30c for nice, yellow wax, 23@26c for the darker grades.

JOHN C. FROHLIGER.

NEW YORK, Aug. 21.—New comb honey is in good demand, and receipts are gradually getting larger, and will continue so from now on. Fancy white sells at 15c per lb., with some exceptionally fine stock at 16c. No. 1 at 14c per lb., No. 2 at 13c per lb., and amber at 12c per lb. No buckwheat on the market as yet, and we do not expect any for ten days or two weeks from now. Extracted in fair demand at 8½@9c per lb. for white clover, 7½@8c for fancy white amber, 7@7½c for amber. No change in beeswax.

HILDRETH & SEGELKEN.

CINCINNATI, Aug. 20.—There has been some new honey arriving, and is selling slowly from 14@16c, according to grade and quantity; there seems to be considerable honey offered. There is only a fair demand for extracted honey, white bringing 9@9½c; light amber in barrels, 7c; in cans, 8@8½c. Beeswax is selling slowly at $33 per 100 lbs.

The above are our selling prices, not what we are paying.

C. H. W. WEBER & CO.

CINCINNATI, Aug. 6.—New comb honey is arriving, and in order to consume the great crop of this section of the country, there must be a lower range of prices than last year. We are selling choice comb honey at from 13@16c per lb., according to the quality and quantity purchased. Extracted honey at 6½@7½c for amber, and 8½@10c for good to fancy extracted honey. The above are our selling prices, not buying prices. For choice bright, yellow beeswax we are paying 28c per lb. delivered here, in cash, or 30c per lb. in trade.

THE FRED W. MUTH CO.

BOSTON, Aug. 20.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

FOR SALE

Remainder of season Golden Tested Queens **90c** each; Untested, **60c** each. Strictly no disease. Safe arrival and perfect satisfaction **guaranteed.**

R. O. COX, Box 8, GARLAND, ALA.

ITALIAN QUEENS

Untested, **70c** each; **6** for **$3.75.**
Tested, **$1.00** each; **6** for **$5.50.**
Safe Arrival Guaranteed

JOHN LEININGER
Ft. Jennings, Ohio

Italian Queens ROOT AND DOOLITTLE Strains direct. Prompt shipments on superb queens from these famous stocks. Untested 80c each, $7.00 per doz. Tested from $1.00 to $1.50 each or $10.00 to $15.00 per doz. Nuclei and full colonies. Write for prices and catalog. No foul brood or other bee diseases. Safe arrival guaranteed. 7A3t

F. M. BABCOCK, Fredonia, N. Y., R. F. D. No. 17.

Please mention Am. Bee Journal when writing.

Special Delivery

During this month we shall double our usual efforts in points of delivery and service. Early indications not having been most favorable, it is possible many bee-keepers will not have laid in a sufficient stock of supplies, such as sections and foundation, for the clover and basswood crop this month. We are prepared to make up for this oversight by having a large stock of both sections and foundation on hand for instant delivery. We carry nothing but the Root make, which insures the best quality of everything. We sell at factory prices, thereby insuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to bee-keepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

HONEY AND BEESWAX

If you haven't made arrangements for the disposition of your honey and wax for this season, consult us. We buy both in large quantities, and can assure you of fair and courteous treatment, and a good price for your crop.

Shipping-Cases.

To sell your crop to the best advantage it must be well put up in attractive style. We have shipping-cases that answer every requirement of looks and utility. Small producers who sell their crops locally will be interested in the cartons in which comb honey is put up to sell to the fancy customers at top-notch prices. We have honey-cans, too, in cases for those who produce extracted honey. In fact, there isn't anything we don't have that the bee-keeper needs, either to produce his crop or help to sell it.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - OHIO.

25 TWENTY-FIVE PRIZES 25

For the best pictures of bees, bee-appliances and bee-scenes sent in before November 1, 1912

First Prize, Cash	$25.00
Second	10.00
Third	5.00
Fourth	5.00
Fifth	5.00

6th to 25th each one copy of "Langstroth on the Honey-Bee," or in case you have this we will substitute any other standard work on bees

Restrictions:—All pictures to be clear and of good print, and accompanied by at least a short description. We reserve the right to use any and all pictures sent in. No picture will be accepted which has already been used in publication.

Any size picture will do. Send in your pictures now, or take them now and send them in before the date mentioned above.

For every picture we use, even if it does NOT come in the prizes, we will give a premium of some sort

It is our aim to increase the value the American Bee Journal, and we must have good pictures and plenty of them. Remember, our magazine is a National bee-paper

THE AMERICAN BEE JOURNAL

Hamilton, Hancock Co., Illinois

AMERICAN BEE JOURNAL

OCTOBER 1912

Mass Agl College april 17
Library Amherst, Mass

Members Present at the Second Meeting of National Japanese Bee-Keepers' Association

This meeting was held at the Gifu Legislative Assembly Hall, Gifu City, Japan, April 23, 1912. Mr. Iwata, the editor of the Japanese bee-magazine, "The Friend of Bee-Keepers," informs us that the meeting was presided over by Mr. Y. Nawa, of the Nawa Entomological Laboratory, and was attended by about six hundred bee-keepers.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec12" on your label shows that it is paid to the end of December, 1912.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 4 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 25th of the preceding month.

SPECIAL 30 Days' Sale

Best No. 1 sections, 1000, $4.00; 2000, $7.60. Plain, 25c less. Best white pine Hives with supers, $1.25; 10-fr., $1.40. 24 lbs. 2-inch glass shipping-cases, 15c. Mother-wort seed, per package, 10c, postpaid. Catalog **free.**

H. S. DUBY, St. Anne, Ill.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.,** and state from which point you wish your Supplies shipped. J. J. WILDER.

Please mention Am. Bee Journal when writing.

FAMOUS QUEENS DIRECTLY from ITALY
BEES MORE BEAUTIFUL, MORE GENTLE, MORE INDUSTRIOUS, THE BEST HONEY-GATHERERS

Universal Exposition, St. Louis, Mo., 1904, highest award.

Extra Breeding Queens, $3; Selected, $2; young, fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write **Anthony Biaggi,** Pedeville, near Bellinzona, Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

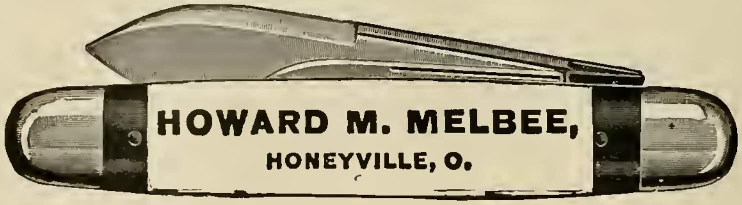
Please mention Am. Bee Journal when writing.

SWEET CLOVER SEED

for fall sowing, both yellow and white bloom; new crop now ready. Best legume fertilizer, good pasture and hay. Price and circular, how to grow it, **free.** Also Kentucky bluegrass seed. John A. Sheehan, Falmouth, Ky.

Please mention Am. Bee Journal when writing.

BEE-KEEPER'S NOVELTY POCKET-KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

SURE, Old Combs are Valuable

IF SHIPPED TO US FOR RENDERING

We Extract 99½ Percent of Wax

And then Pay you Highest Market Prices, or 2 cents additional in Trade

YOU CAN'T APPROACH THAT FOR PROFIT

We need great quantities of Comb and Extracted Honey
Write us

THE FRED W. MUTH CO.
"The Busy Bee-Men"
204 Walnut Street, CINCINNATI, OHIO

HONEY FOR SALE

By the National Bee-Keepers' Association

Beginning in September, we are arranging a card record of every member of our Association who has honey for sale. This record will tell the amount of honey he has, what kind, how put up, and the price f. o. b. his station. Buyers who are in need of honey, whether in ton or car lots, will do well to write us stating their wants. We will then refer you direct to the bee-keeper having what you want, and the deal will be made direct between you and him.

NO CHARGE FOR THIS INFORMATION

Not one cent will be charged you for this. Our object is to widen the distribution of honey, bring buyer and producer closer together, place each particular kind of honey in the market that demands it, and thus assist the producer in getting a better price.

OTHER BENEFITS

We have furnished our members, this year, with standard tin packages for extracted honey. Hundreds of dollars worth have been sold, and buyers are coming back for their second and third orders. This tells you the satisfaction they are giving. Are also handling glass packages.

THE BEE-KEEPERS' REVIEW

This is now the official organ of the Association. Send in One Dollar now, and get the Nov. and Dec. numbers free. The Dollar will apply on your 1913 subscription. When you get the "Review," look up the list of Branches, and send 50c to the nearest one. This total of $1.50 will entitle you to full National and Branch benefits, together with a subscription to the "Review" to the end of 1913. We now have 23 National Branches in almost as many different States. Let us help **you** sell your honey. Address,

The National Bee-Keepers' Association
E. B. TYRRELL, Sec., 230 Woodland Ave., Detroit, Michigan

George W. York
Sandpoint,
Bonner County
Idaho

A Big Bargain—Must Sell

A friend of mine here has 10 acres, 3¼ acres under cultivation, bal. excellent celery land; large 3-room house with closet, bath-room, kitchen-sink, and built-in features in kitchen; woodshed and 20 h. p. boiler under it; greenhouse 16x20 feet, stocked; abundance of springs with best of water; 2 horse-power gasoline engine. 1½ miles from Sandpoint, and two other towns within 1½ miles. ¼ acre in strawberries, bal. in garden-truck. Good market for all that can be raised. Fine location for bees and poultry, also. Cost $4500 four months ago; will sacrifice $500 if sold at once. Terms, ¼ down, balance on or before 5 years. Write quick if you want a good thing. Address the undersigned, as I would like to help my friend who, on account of other business, will sacrifice as stated. I consider it a fine opportunity to get an established business and home.

Untested Italian Queens

The kind I have furnished for years—the rest of the season at these prices: 1 for 75c; 3 for $2.10; 6 for $4.00; or 12 for $7.50.

Some Special Offers

American Bee Journal one year ($1.00) with either "First Lessons in Bee-Keeping" (50c), or Doolittle's "Scientific Queen-Rearing" (50c), for only $1.00; or the American Bee Journal a year with **both** of the books mentioned—all postpaid for only $1.40.

If you prefer, you can have Gleanings in Bee Culture for a year instead of the American Bee Journal in the above special offer; or, if you want both books and both bee-papers, send $2.20.

Send for my **free** Circular of other special offers.

White Sweet Clover Seed

I have a quantity of White Sweet Clover Seed in Chicago, Ill., which I will sell at the following low prices so long as it lasts, all orders to be sent to me here at Sandpoint, Idaho:

5 lbs. for 80c; 10 lbs. for $1.50; 25 lbs. for $3.50; 50 lbs. for $6.50; or 100 lbs. for $12.00.

If wanted by freight, add 25c for cartage on your order.

While I make the handling of bee-literature a specialty, I also take subscriptions for general magazines. Write me what you would like in the way of bee-papers, bee-books, etc., and I will be glad to quote you some attractive prices. Address,

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
Sandpoint, Bonner Co., Idaho

Please mention Am. Bee Journal when writing.

Untested Italian Queen-Bees

Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co, Kan, July 15. A. W. SWAN.

GEORGE W. YORK & CO:—After importing queens for 15 years you have sent me the best She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22 CHAS. MITCHELL

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W YORK & CO.:—The queen I received of you a few days ago came through O. K. and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

MARSHFIELD GOODS

BEE-KEEPERS:—

We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

Continental Cans

are Cans of quality, manufactured in the most up-to-date can factory in the World by expert can makers who, from many years of practical experience, know how. You cannot afford to overlook us when placing your can business.

We Make a Specialty of Friction Top and other Cans for Honey

carrying a large stock of same in our Chicago factory for prompt shipment.

LARGEST INDEPENDENT CAN MAKERS IN EXISTENCE

Factories at Chicago, Syracuse, Baltimore and Canonsburg, Pennsylvania. Write for prices.

Continental Can Company

Sales Office: No. 72 West Adams Street, Chicago, Illinois.

If BEES could TALK

THEY WOULD SAY:

"GIVE US DADANT'S FOUNDATION

It's Clean. It's Pure. It's Fragrant.

It's just like the Comb we make ourselves."

If you are not using "**Dadant's Foundation**" drop us a card and we will give you prices, or tell you where you can get it near you—

Agents Everywhere.

DADANT & SONS,
HAMILTON, ILLS.

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., OCTOBER, 1912

Vol. LII---No. 10

EDITORIAL COMMENTS

Fertilized Queens and Virgins

Mr. Doolittle, in his article in the present number, calls attention to the treatment of queens by the bees. We might add to what he says that fertilized queens which are laying are much better cared for by the bees than virgins. In a fair season a dozen laying queens may be kept in cages on the same comb and they will all be fed, while virgins would be neglected.

The better prepared a queen is to lay eggs the better the treatment she will receive. That is why queens transferred from one colony to another in the same apiary without lingering in cages are better and more quickly accepted than queens which have traveled, and whose ovaries are therefore in poorer shape for prompt laying.

Bee-Keeping in Schools

More and more bee-keeping is claiming recognition as a branch of agriculture that should have its place in a complete course of study, especially in country schools. According to the account of the Irish Bee Journal, the Education Committee of the Staffordshire County Council stands well in the lead in this matter. Bee-keeping of a very practical sort has been introduced into 8 of its country schools. Each school has 2 colonies of bees, one to be tinkered with constantly to show to the children what goes on in a hive, the other to be left undisturbed so as to do its best at honey storing.

The teachers are instructed by the first-class expert and lecturer, Mr. J. Tinsley, with the "Practical Bee Guide" of Editor J. G. Digges as a text-book, and have shown great interest. Each school is supplied with a smoker and 10 bee-veils. It was thought that the children would be somewhat afraid of the bees, but, on the contrary, the teachers find it is more trouble to hold them back, as they exhibit no fear whatever.

Note also elsewhere what Tunis is doing. Why are not these examples worthy of general imitation in this country?

Middleman's Profit

In this number will be found another article on the above-named subject by Mr. Fehleisen, in reply to Mr. Foster. The Editor does not accept responsibility for articles from any one. However, in this case, we wish to say that Mr. Foster does not propose to do entirely away with the middleman, but to get producer and consumer more nearly together and reduce the cost of disposing of our honey, which has always been too great. But the business of the middleman is just as legitimate as any other. His labors should be rewarded.

As to the possibility of graft and subsidy in the prospective parcels post, it can never equal the graft and overcharges of the express companies. We should have domestic parcels post at least as cheap as international postage.

Weed-Tasters for Kansas

"Weed-tasters are to be employed soon by the Kansas Agricultural College. The men will give their chief attention to sweet clover, especially in the western half of the State. Their task is to find the sweetest patches, the really sweet, for use in propagating the plant where it is most needed for feed.

"The determination to employ weed-tasters was decided June 14, in a meeting of the Board of Regents. It grew out of the fact that sweet clover will thrive on alkali ground in the extreme western part of Kansas. It is very similar to alfalfa, and yields from 3 to 5 tons an acre every year. It grows wild in many places, and farmers are beginning to cultivate it. There is a difference, however, in the clover plants, so, for this reason, men are to try to find as much as possible of the really sweet clover."

The foregoing, from the Country Gentleman, is an item under the general heading, "The Advance of Agriculture." It surely does seem an advance to those of us who have known what a bitter warfare has been waged against sweet clover as a noxious weed. When intelligent agricultural advance allows sweet clover to come into its own, the bee-keeper will be glad to share in the advantage.

What Becomes of the Drones?

When forage becomes scarce in the fall we may get our first intimation of it by seeing the workers chase the drones about the entrance. On opening the hive we may find the drones huddled together disconsolately in a group outside the combs, and in a few days they are gone. They may be found lying dead in front of the hive, or they may disappear without leaving any trace. The same thing may occur even while forage is still plenty in a colony where a young queen has just begun laying, and there is no apparent need of drones for another year.

Now what becomes of the drones? It is a common thing to say that the workers kill them, but do they? In Root's "A B C and X Y Z" we find this: "I do not know that I ever saw bees sting drones, but they sometimes pretend to do so. I rather think it is only a feint to drive them away." Others tell us that drones cannot live upon honey and bee-bread as it is to be had from the combs, but depend upon the workers feeding them partly-digested food; so when drones are no longer desired the workers withhold the food and they starve. It looks as if it might be that way. You probably have seen workers feeding drones, and have seen drones act as if asking for food. Upon lifting a comb out of the hive it is a common thing to see the workers dip their heads into the cells to load up with honey. Did you ever see a drone do that?

If workers really sting drones to death, it ought not to be a difficult thing to see it. You have likely often seen a worker sting another worker, and you know that death occurred in a very few seconds. You have seen workers acting as if stinging a drone,

American Bee Journal

but did not the drone always get out of the way in apparently good health. Did you ever see a drone curl up dead very shortly after being stung?

The matter may not be one of great practical importance, but it is well to know the truth. If workers do not sting drones to death it is just as well to stop saying so.

Breeding for Improvement

While some hold that the bee is perfect of its kind, with no possibility of improvement, there are others who are quite hopeful in the matter. Among these is Geo. B. Howe, who has written a series of very interesting articles for the Bee-Keepers' Review. Even as to the matter of non-swarming he takes an optimistic view. To those who have some belief that a non-swarming strain of bees is among the possibilities, the following passage will give aid and comfort:

"We surely will never get non-swarming bees until we use queen mothers that have a record of not swarming; also using drones of the same strain. The incubator will not help in the least, nor will artificial-reared queens help about breeding non-swarming bees. *But you will have to breed and rear your queens from colonies not given to swarming.* I have had one experience which has greatly encouraged and strengthened my belief in breeding for non-swarming.

"I had a queen, No. 116. I reared about 50 daughters from her, and not one of them ever swarmed. I had some of those queens four seasons, and I never found a larva or egg in a queen-cell. I would have had more of those queens, but they were too cross. If I had known what I know now, I would have given them a better trial. I learned *right there*, even if a queen or colony was *quite cross* and not gentle to handle, it paid to breed from her, as I find that we sometimes get our most gentle colonies from them; that is, if we have the right drones to mate with them."

Note that the first thing is a careful record. Whether it be to breed for non-swarming or for a big crop of honey, a permanent record should show just exactly what has been done, with some expectation that whatever has been done may be, at least to some extent, repeated in future generations. If Mr. Howe had not thus kept track of every colony, he would have failed of that remarkable record of 50 daughters that never swarmed.

But it must be expected, according to Mr. Howe, that there will be lapses. After breeding for six years he thought he had a practically non-swarming strain. Then in the seventh year he was disgusted to have them swarm for a couple of days, as if they were possessed. But he now thinks that is just what he should have expected, for it was an *unusual* season, and was reported one of the worst seasons on record for swarming.

He discontinued breeding from that remarkable strain because of its bad temper, but thinks if he had continued he might have struck a gentle streak in them. The question arises whether one is not likely to get bad temper along with desirable qualities. Is it not likely to be the case that a colony which shows great industry at storing is at the same time industrious at stinging? Yet older bee-keepers who changed from blacks to Italians will recall that in the change from the former to the latter the gain in temper was as great as the gain in industry? This again raises the question whether the Americanized Italians are as gentle as those imported years ago.

Disposing of the Honey

FRIEND DADANT:—I desire information on the best way of disposing of a crop of some 1500 pounds of extracted honey and about 300 pounds of comb honey. I desire to ship it, but do not know where. I wrote to.......... in Chicago, and he has offered to sell it for me upon 10 percent of commission. What do you think of it? Where will I be likely to get the best price? The year has been good for my bees, and I wish to make as much from my crop as possible. I started the season with 36 colonies, and now have 97, so you see that I have had a very fair result. ILLINOIS.

The best method to follow in selling a crop of honey of the size mentioned, is to advertise it among your neighbors. By letting people know that you have a good crop and letting them sample it whenever occasion offers, you can dispose of a large amount, provided your price is reasonable.

An apiarist of Indiana, Mr. John C. Bull, at the Chicago-Northwestern convention last winter, explained how he sold thousands of pounds of honey directly to consumers, by going around with a sample can, from house to house, and offering each housekeeper a taste of it. That is the best and most profitable way of selling your honey. You may sell it to retailers also, at a little less price than to consumers, say 10 or 12 percent less. After your trade is once established, future sales will be easier.

The next best way to sell honey is to advertise it in the bee-journals. There are always bee-keepers whose crop is short, or who have sale for more than they produce. A few lines in the "want ads" cost but very little, and are sure to bring enquiries.

The third method of procedure is the method you have thought of, shipping to commission merchants in the large cities. It is the most expeditive, but it is also the least profitable. The commission man, whose name you mention, is very reliable, and will get you the best possible price for your honey. But you must remember that your product thus comes in competition with that of thousands of others, that you have to pay freight on it and commission, and that it will pass through the hands of at least two middlemen before it reaches the consumer who may be living next door to you. There may be also an additional freight to pay from the large city before it reaches the consumer who may be living next door to you. There may be also an additional freight to pay from the large city before it reaches the place of consumption.

In many instances bee-keepers have shipped their honey away and have witnessed the sale, in their own town groceries, of honey from away. So they have paid freight and commission to get rid of the honey and some other bee-keeper, in a far away locality, has done the same thing, both losing a part of the profit in the transaction.

Of course, there are localities where so much honey is produced that it cannot be sold in the vicinity. In such places it becomes necessary to ship it away to the commission man. But one ought to make very sure that one's market is overloaded before doing so, and one must not blame the commission man if he cannot secure as good prices as could have been had if we retailed our product at home.

Remember also that honey does not sell well until cool weather has come and fresh fruit is partly out of the way.

ESSAYS ON BEES AND BEE-KEEPING, MANOUBA, TUNIS.—(See page 295.)

Honey in Pollen-Bags

The honey-bee is an object of universal interest, and penny-a-liners frequently take it as an object upon which to give information, and almost invariably serve up as facts something so far from the truth as to be absurd. The latest instance to hand is perhaps the limit. The Irish Bee Journal quotes as follows:

> "Capture in an airy box with a little honey a bee whose pollen-bags contain honey. Give opportunity for a good look at it, noting body, wings, legs, antennæ, and, if possible, its tongue. Do not at present explain pollen-bags."

How's that? It is not taken from the column of jokes in a funny paper. It appears in a school paper under the head of "A Nature Talk" on "Bees as Busy Workers," and appears in all seriousness to be intended as instruction to teachers in public schools as to how they shall talk to the children. Among those who read that school paper some will be amused and some will be mad.

Uniform Grading Rules

Secretary Tyrrell is putting up a good fight for a uniform set of grading rules for the whole country. This is a big country, and pasturage and conditions vary greatly throughout its length and breadth. What is considered honey of best flavor in one part of the country is not looked upon with favor in another. Yet even so, there are enough points in common to make it worth while to set up a standard with regard to those points to which honey anywhere in the country should conform.

Take the matter of density in extracted honey. Immense harm has been done to the honey market by the watery, unripe stuff that has been put upon it by unscrupulous—more often ignorant—producers. Let a certain standard of so many pounds to the gallon be set as the least density to be allowed, and it is not impossible that in time even the most ignorant might learn to conform to that standard.

In the matter of comb honey the correspondence published in the Bee-Keepers' Review shows a wide diversity of opinion among bee-keepers. One will admit in No. 1 what another will admit only in No. 2. One will admit in the lowest class what another will condemn as culls and unmarketable. No matter what the flavor, there may be an agreement that in a certain class there must not be more than so many unsealed cells. And so with regard to other points. There can be—there should be—a getting together and agreeing, just so far as this is possible. Secretary Tyrrell is the right man to take the lead in this matter, and all bee-keepers should second his efforts.

Three Editors for the Review

The Bee-Keepers' Review now flings to the breeze at its masthead as its corps of editors E. B. Tyrrell, Managing Editor, with E. D. Townsend and Wesley Foster as Associate Editors. That's a strong team, and ought to do good work.

MISCELLANEOUS NEWS ITEMS

Bibliography.—"La Tunisie Apicole" (Apiarian Tunis), by J. Georges, Chevalier du Mérite Agricole, President of the Tunis Bee-Keepers' Association. A volume of 224 pages, with numerous engravings, maps and tables of statistics of bee-culture and its products in Tunis. Price, 3,25 francs (65 cents).

Mr. Georges is a young pioneer of Tunis, a professor educated at the Tunis Normal School, backed by the French Departments of Agriculture and of Education of this colony.

His acquaintance with native conditions of apiculture is thorough. His first chapter is devoted to a description of the methods and the hives in use by the natives from time immemorial.

The Tunis hive, or "djeba," is a cylinder similar to those in use in Asia Minor and a part of the Orient. It is from 8 to 12 inches in diameter, and 4 to 5 feet in length. Driving 6 or 8 stakes into the ground, the native interweaves through them flexible switches of willow, reeds, and sometimes wires or twisted straw. After the weaving is finished, the tube is covered with a mortar made of wet clay and cow-dung, which is afterwards dried in the sun. The circular openings at the extremities are closed with disks made of straw and mud, in the same way, one of the end disks having a notch for the entrance.

In districts where the cork-oak is plentiful, a roll of bark is peeled off a medium-size tree and the split edges are coarsely sewed together. A disk of cork from the same tree closes the ends. The male cork-tree is not fit for industrial uses, and is used for this purpose on account of its low value. In localities where wood is scarce, they use such vegetable fibers as dwarf palm, etc.

They also make plaster casts shaped over rolled mats. After the plaster is dry, the mat is easily removed, to be used again. They have even hived bees in drain tiles of the proper size, and the author cites an instance where a pioneer settler had imported a lot of 10-inch tiles which disappeared gradually from his premises. He was unable to ascribe any cause to this occurrence until one day, during the course of a wild-boar hunt, away from his immediate vicinity, he discovered his tiles, carefully piled on a hillside, constituting the hives of a magnificent and prosperous apiary.

In the mountains of Kef, and south of Sidi-Bouzid, they hive the swarms in holes dug in the ground on a hillside. The hole, made of proper depth and length, is covered with parallel stems of thuya, a native, sweet-smelling sort of juniper. With a few guides fastened to the underside of these stems, they serve, like the top-bars of our frames, as comb bearers. The whole thing is covered with flat stones, or earth and grasses. The author calls this bee-keeping by the name of "troglodyte." It will astonish no one to read of such underground habitations for bees, since the mountains inhabited by "troglodyte" human beings are to be found only a few miles to the south of the Tunis protectorate.

The natives appear to believe that bee-pasturage may be pointed out to their colonies, and for this purpose they enclose a number of bees from their apiary in some sort of closed receptacle and carry them to fields of blossom at a distance, where they release them, claiming that in this way the bees are directed to crops which they might entirely miss. (?)

Apiaries of 500 colonies are common, and the hives are piled in rows, in tiers of three and four, then covered with straw, hay or weeds to protect them from the direct rays of the sun. Thorny brushes are used to fence away marauders who are numerous.

A Lesson in Bee Culture—Sun-Extracting of Beeswax—Manouba, Tunis.

The queen-bee is called "sultan," or king, and the drones "berra," or mules. The queen-cells, which we compare to

Bee-Hives and Implements at the School of Villejacque, Tunis.

an inverted acorn-cup, are by them called "olives."

Migrating bee-culture is sometimes practiced, and the bees are then carried on camel-back.

Thyme honey is most in demand on account of its flavor. The honey of the islands of Galite and Pantellaria, in the Mediterranean, is especially renowned because of the profuseness of this plant in those volcanic islands.

Foul brood is frequent, but its ill-effects are said to be lessened and its cure made easier by the gathering of the fragrant and aromatic nectar of thyme, rosemary and eucalyptus.

The Tunis bees are smaller than our common bee. They are of a cross disposition, but well fitted for the sudden changes of climate of Tunis. They are so numerous that swarms take possession of any crevices or hollows, and have even been known to enter the globes of the street lamps of Tunis.

The statistics show a total of 10,426 bee-keepers in Tunis, all but 636 of them being natives. The number of hives of bees given is 220,142, of which only 7,280 are modern hives with movable frames. The total production of honey in 1909 was 2,500,000 pounds; beeswax, 253,000 pounds.

The honey-producing surface of Tunis, deducting waste land and lakes, is estimated at 7,260,000 acres. Less than half of this area supports as many bees as might be kept.

The most interesting portion of the above-named book is the chapter on apiarian teachings at the primary schools. The Bee-Keepers' Association was organized in 1901, but in 1903 there was but little practical bee-culture followed as yet. School teachers were urged to learn and practice bee-culture. In 1904, only 4 school teachers in Tunis were bee-keepers and able to teach bee-culture. In 1910, their number had increased to 105. The book contains two photographs of apiarian school-rooms, one for the theory, the other for the practice in handling frames, foundation, sections, etc. Tunis is evidently coming to the front, and this book will do much good.

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Bee-Culture in Oregon.—An enquiry having been made by us into the state of bee-culture in Oregon, we have received the following reply from the Secretary of the State Bee-Keepers' Association:

Dear Sir:—In answer to your letter, I will say that we have a regular course in bee-culture, and also a course for the farmers' short course during the winter.

Eastern Oregon is by far the best bee-keeping section of the State, for the reason that most of the farmers grow alfalfa. In the Rogue River Valley about Medford, there is a limited territory where there are probably 1500 to 2000 colonies. I understand about 30 tons of honey will be shipped from there this fall. In the Willamette Valley, and the rest of western Oregon, very little honey is produced for the reason that there are no large fields of alfalfa.

The State Board of Agriculture has introduced a division of bees, and I hope to see an exhibit there this fall for the first time. Mr. Frank E. Meredith, of Salem, Oreg., is the secretary, and I am certain that he will be glad to send you a premium list if you will write to him. Very truly yours,

Corvallis, Oreg., Aug. 15. H. F. Wilson.

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Bonner County, Idaho.—We are in receipt from friend York of the Bonner County Fair premium list. In this list, the bees are recognized to the extent of $20 in premiums, besides several premiums in donations. Friend York is the Superintendent of this department.

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Bees Which Visit Only One Species of Flowers.—The Popular Science Monthly for August contains a very interesting article from the pen of John H. Lovell, of Waldoboro, Maine, with the above-named heading. It refers to varied numbers of insects belonging to the same order as our honey-bee, and incidentally to the honey-bee itself. We quote a few passages:

"When a female bee, in gathering pollen for brood-rearing visits but one kind of flower, it is termed a monotropic bee, or if only a few allied species an oligotropic bee; but if it visits many flowers it is called a polytropic bee. These terms were first proposed by Dr. Loew, and signify adapted to one, few or many flowers.

"The oligotropic habit is not beneficial to flowers, it concerns the bees alone. The oligotropic bees are almost without exception solitary forms, to which there are no flowers specially adapted. The social bees, as a rule, visit a great variety of flowers, though in Europe it is stated that there is a bumble-bee *Bombus gerstaeckeri*) which visits a single species of monkshood (*Aconitum lycoctonum*). Here, of course, the adaptations are mutual. This mode of flight, however, has not in general been determined by floral adaptations. Certain species of bees have become satellites of certain flowers because of the advantage thus gained for themselves, and partly also, perhaps, as the result of habit. Just as there are fly-flowers, butterfly flowers and bumble-bee flowers, so, on the other hand, there are willow bees, golden-rod bees, a pickerel-weed bee, a loosestrife bee, a violet bee, and a strawberry bee.

"Two most important influences are the season of the year and the length of time the bee is on the wing. It is clear that bees which fly only in spring or autumn for about a month, have not a great choice of flowers. Usually the length of time an oligotropic bee flies, and the flower it visits is in bloom are about the same. The honey-bee is practically a monotropic bee at certain seasons of the year. While the basswood and white clover are in bloom, the honey-bee visits these flowers almost exclusively. Again in the fall, in Maine, it confines its attention solely to the golden rods. In California, at times, it collects nectar exclusively from the sages; in Michigan from the willow-herb, and in other regions from other plants. If from any one of these plants it also obtained its supply of pollen, and was on the wing only while it was in bloom, it would be regarded as a monotropic bee in the strict sense of the word. That it exhibits a strong tendency, when collecting pollen, to be constant to one plant species is well known; and the little packets of pollen it brings into the hive seldom consist of two kinds of pollen. But, when a bee flies from spring until fall, and requires a large amount of stores, it is evident that it can never become oligotropic."

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Horsemint Honey.—By the kindness of my friend, Prof. Wilmon Newell, I have received a liberal sample of honey from horsemint (*Monarda punctata*). Horsemint is widely distributed, but is especially at home in Texas, and there does its most important work as a honey-plant. So I was interested in the sample, and especially so as it was put up in the style of the famous bulk-comb honey so popular in Texas.

The sample was of the June flow, put up in a Simplex glass jar, containing about ⅝ of a pint, or a pound of honey. The general appearance was to me displeasing, for it took me back to the days when the sight of a piece of comb honey resting in a liquid was a sure sign that the liquid was nothing but glucose. But that isn't fair to bulk-comb honey, for the days of such adulteration are past and gone, and the average consumer—indeed, the producer of today—sees only a beautifully clear honey of light amber, containing a piece of comb honey that appears a bit lighter still.

A Lesson in Extracing Honey, Manouba, Tunis—(See page 295.)

I didn't think to weigh the liquid and comb separately, but the mouth of the jar is of such size that it admits, without crushing, a piece of comb honey about a third as large as the contents of the jar. But by crushing the corners one could squeeze in a larger piece. In larger vessels the comb is supposed to be twice as much as the extracted.

It does seem to me that a thorough search over a State as large as Texas ought to have resulted in finding a better name than bulk-comb honey. That name can appropriately apply to something that is all comb honey, but hardly to that which is from a third to two-thirds extracted.

The flavor of horsemint honey is quite pronounced. Those who sampled it agreed that it had a good taste, but a little too strong. The sampler said, "I like it better than clover honey it; has a richer flavor." That same sampler prefers buckwheat to clover. So what one calls rank another calls rich. Where a pronounced flavor is favored, it is easy to believe that hosemint honey should be popular.

After writing the foregoing I sent a copy of it to Prof. Newell. A response from him showed that I didn't know all that was to be known about honey down Texas-way. I might make corrections according to the new light received, but Prof Newell's letter is so interesting and full of instruction that I prefer to make no corrections, but print his letter, even if it does show up that I don't know as much as I thought I did. Here is the letter:

College Station, Tex., Aug. 24, 1912.
Dr C. C Miller, Marengo, Ill —

Dear Dr. Miller:—I have your very kind letter of the 20th and copy of your note on the horsemint honey, prepared for the American Bee Journal. I gave you a wrong impression about the packing of that bit of honey. I placed it in a Simplex jar because that was the right size for a sample, and I put in both comb and extracted because I I wanted you to see both; but I certainly never intended to give the impression that *that* was the way they pack bulk-comb honey in Texas, or that the proportion of extracted and comb in that jar was any indication of the proportion which ordinarily holds in the packing of bulk-comb honey.

I have never seen any bulk-comb honey put up for the general market in glass jars, and while it may be done, certainly the number of Texas bee-keepers that put up bulk comb in glass—as a regular practice—must be very scarce. It is invariably in tin pails or cans. The proportion of comb to extracted varies with the individual bee-keeper, but, for my part, I advocate the *filling* of the pail or can with comb honey, after which the extra space is filled with extracted, for the principal purpose of keeping the comb from mashing down—which it will most certainly do if there is no extracted in with it. Most of the bee-keepers, however, do not fill the cans full of comb, but only from one-half to three-fouths full, in order that they may get full weight into the cans. A 60-pound can, for example, will not weigh fully 60 pounds if filled full of comb and then extracted added. However, honey *should* be sold by *net* weight, regardless of how it is packed or what the container is.

Am sorry you got the impression that I was sending you a sample of "bulk comb" honey. Not so, I was just sending a sample of "horsemint honey" and the proportion of comb and extracted was purely *happenstance.*

If you don't like the term "bulk comb," you might adopt one that we heard of a short time ago, away back in the sticks—in the big woods, to be explicit. The term was "slug honey," and the appellation is synonymous with "bulk-comb honey."

Sincerely yours,
Wilmon Newell.

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Bees Versus Roses.—Some time ago, quite a discussion was brought about by the assertion of Gaston Bonnier, president of the French Central Bee-Keepers' Association, that one never saw bees upon roses, no matter how colored or how fragrant. Dr. Miller replied that he had often seen them upon the Crimson Ramblers, and that they even tore the buds open.

The magazine "L'Abeille de l'Aube," in its August number, quotes the different assertions which were made upon the subject since then, in Europe.

Mr. Bonnier came back with the assertion that the bees were only hunting for pollen, as, according to him, there is no nectar in roses.

Jean Huppin, of Fontenay-Aux-Roses, saw his bees take pollen on the roses, but never any nectar.

A. Martinot saw the bees often on the Crimson Ramblers and other simple roses, never on the double flowers.

F. Pitrat believes they find both honey and pollen on the simple flowers.

Louis Rosseil, Consul of Belgium in Athens, says that in the island of Eubea, the bees work upon fields of roses, and produce a white honey much esteemed.

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Unicuique Suum.—Under the above proverb, L'Apicoltura Italiana, of Ancona, Italy, in its August issue, asks who is the discoverer of "enforced fasting" for the cure of foul brood. Dr. Cesare Colantoni quotes his own letters to L'Apicoltore, in date of 1896, showing that he supported this method of treatment of the disease as early as 1882.

We had the curiosity of looking up the records to find the earliest method of cure in the United States. Langstroth, in 1857, gave in his book the following from a German apiarist, whom he does not name:

"Drive out the bees into a clean hive and shut them up in a dark place without food for 24 hours; prepare for them another clean hive fitted up with combs from healthy colonies, transfer the bees into it, and feed them with pure honey."

This was not fully the fasting system, but a little later Quinby, in his "Mysteries of Bee-Keeping," 1866, page 219, says:

"All the bees should be driven into an *empty* hive. If it is desirable to put them in a hive containing comb, they may be transferred to it after they have been in an empty one *long enough to consume all the honey they have carried with them.*"

E. P. Abbe, of Massachusetts, in September, 1879, reported in the American Bee Journal for that year, page 450, that he successfully practiced the confining of bees until they had used up all their honey, as a cure for foul brood; L. C. Whiting, in the National convention of that year made a similar report.

It was probably at this meeting that the attention of D. A. Jones, of Canada, was drawn to the "starvation method," which resulted in its being adopted by Canadian apiarists and becoming known as the "McEvoy cure." Many of us have read about it, but so many different methods were claimed as successful that but little attention was paid to it by the general public until the 90's.

Schirach is said to have been the first man to try this method and succeed.

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Comb Honey.—Farmers' Bulletin No. 503, of the Department of Agriculture, has been sent to us by Dr. E. F. Phillips, to whom we extend our thanks. This bulletin was written by Geo. S. Demuth, Apicultural Assistant. It is quite exhaustive, contains 48 pages and 20 illustrations, some of which are original.

In perusing this work we notice that Mr. Demuth lays stress upon what we consider a very important point in honey-production, too often neglected. It is the necessity of securing the force of workers at the proper time for the honey-flow, building up the colony early enough, providing sufficient stores and available brood-space, preserving the heat of the brood-nest, etc. There are also most judicious instructions for preventive measures in regard to swarming. Three pages are devoted to caring for the crop.

The bulletin may be obtained free by addressing the Secretary of Agriculture, Washington, D. C.

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Northern Illinois and Southern Wisconsin Meeting.—The annual meeting of the Northern Illinois and Southern Wisconsin Bee-Keepers' Association will be held in the Court House at Rockford, Ill., on Tuesday, Oct. 15, 1912. All those interested in bee-keeping are cordially invited to attend.

B. Kennedy, *Sec.*
2507 W. State St., Rockford, Ill.

◆

A New Cage for Shipping Bees.—The Editor received, from Mr. E. R. Root, Sept. 13, a 3-pound cage of bees, of which we give cuts, both full and empty. The cage was accompanied by a letter, stating that experiments were being made of shipping bees in hot weather without combs, for migratory bee-keeping. A tin water bottle and vertical wooden slats are the principal new points of this method. The bees came through in splendid shape, but the hot weather had just abated, and the temperature at the time when the bees were received was only about 65 degrees. But as there were not more than a dozen dead bees in the cage, and the swarm was apparently contented and had ventilation all around, it is our opinion that this method will prove a success in almost any kind of summer weather, and our thanks are heartily extended to Mr. Root for his judicious experiment. It cannot fail to be useful to bee-keepers all over the country.

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Judges Kansas Exhibit.—Mr. C. P. Dadant was judge of the honey-exhibit of the Kansas State Fair at Hutchinson, Kan., Sept. 18. The exhibtt was very fine. An account of it will be given in our next number.

Fire at Cincinnati.—A fire destroyed a part of the F. W. Muth Co.'s stock of honey and supplies Sept. 10, but Mr. Muth reports that most of the loss was covered by insurance, and that they will suffer but little in consequence of this. They are moving to 204 Walnut Street.

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Illinois Bee-Keepers to Meet.—The Illinois State Bee-Keepers' Association will hold its annual meeting at the State House in Springfield Oct. 30 and 31, 1912. Matters of importance to the bee-keepers of the State will be discussed, and a large attendance is expected.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Not Afraid of Bees

We have received the following letter and photograph from Mr. J. C. Mosgrove, of Medina, Ohio:

> Will you permit mere man to contribute something for your page in the Bee Journal. The enclosed photograph was taken in my apiary. The young lady shown never had a frame of bees in her hands before, but she had the grit to hold it and pose for her picture.

Oh, Pshaw! Who's Afraid?

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The Value of Honey as a Food

We do not as yet begin to realize the wonderful food that the bees offer us in their honey, and no child is apt to overeat it, owing to its cloying nature. In Germany the intelligent housewife uses honey in her cakes, puddings and gingerbread, not only because she thus finds a more economical and healthful substitute for sugar, but also for the reason that the bees fill the honey with a natural preservative that keeps cakes fresh for an indefinite period. In fact, the Germans use honey in their salad-dressing, which not only gives it a delicious flavor, but it has also been found that it satisfies the child's craving for sweets so that he has no desire for any subsequent dessert.—*Ladies' Home Journal.*

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Queer Doings of Bees

Bees are freakish things. Sometimes they seem to be practical jokers, doing some unusual thing to discomfit the bee-keeper and then chuckling over it.

July 29, this year, a queen-cell with 3 eggs in it was found in colony No. 2. The presence of more than one egg in a queen-cell is a sure sign of laying workers, but this case, instead of a sure sign, proved a joke, for 10 days later brood showed that the queen had been present.

August 12 a swarm was seen issuing from this same hive, No. 2. Pretty soon a queen was caught issuing from the entrance, but instead of having clipped wings, her wings were whole—she was a virgin! She was caged, and the cage was stuck in the entrance. Examination showed that no queen-cells were in the hive, nor any unsealed brood.

The swarm returned after a time—it was a big one—and the queen was liberated in the evening. So far as we know they did not swarm again, and 8 days later she was found laying nicely. The question is whether the bees intended to abscond, leaving no sign of a queen or a queen-cell in the hive, whether they were trying to accompany the young queen on her wedding-flight, or whether it was all a joke.

August 16, a swarm issued from No. 49, and returned. The next day the hive was opened and a virgin was found present. A day later a large swarm issued again, settled on a tree, then arose and settled on another tree. It stayed there so long that it looked as if the next move would be to go off for good. So it was hived, and a frame of brood was given to it. Soon after being put on its stand the swarm came out again and returned to its old hive—all but a few bees which stayed on the frame of brood, making a nucleus to which a virgin was given 3 days later, and today she is busy laying eggs. A few days later a young queen was found laying in No. 49, and she was promptly clipped.

It would seem that No. 49 had no notion of going off any of the time, but was only making believe so as to frighten us.

No. 33 swarmed and its clipped queen disappeared. Five days later a young laying queen was dropped on one of the combs among the bees. A rather reckless way of introducing, but when there is a good flow of nectar it is often successful. Three days later neither eggs nor queen were found in the hive, and a lot of queen-cells had been started. It was marked queenless in the book, and a virgin was given. When she was old enough to be laying, plenty of eggs were found, and search was made for the queen so as to clip her. But when she was found she was already clipped. Clearly the laying queen that was dropped on the comb had not been killed, but had remained in the hive 3 days or more without laying. Was she hidden in some corner of the hive chuckling to herself when the fruitless search for eggs was made?

Of course, the virgin queen had been killed, but if the laying queen had not been clipped the mistake might have been made of supposing that the virgin had succeeded in introduction.

European Foul Brood

A bee-keeping sister who has a little European foul brood in her apiary desires to know whether we still prefer to treat that disease by temporarily stopping brood-rearing rather than by melting up the combs. Yes, we do. We have returns of the disease after such treatment, but so we did when we brushed the bees upon foundation and melted up the combs. But if watched reasonably close no case ever becomes very bad. One of the most important things in the treatment is to make sure that the colony is made *strong*, either by uniting colonies or by giving frames of sealed brood from healthy colonies; of course, unless the colony is already strong. No use trying to do anything with a weakling. The queen may be killed, and, at the same time, with proper precautions, a queen-cell or a just-hatched virgin of very best stock, Italian preferred, may be given, and the bees will do the rest. If there are only a few bad cells in the hive, and a vigorous queen is present, the queen may be caged in the hive for 8 or 10 days and freed at the end of that time, all queen-cells being killed.

Last year every case was thus treated, even if only a single bad cell was found in the hive. This year there are about a third as many cases as last year, so the matter does not look hopeless. Of course, we cannot tell how many or which cases came from diseased colonies outside, and which from germs within their own keeping.

It is proper to remark that we have had several cases with only a very few bad cells in the hive where the bees have cleaned it up without any killing or caging of the queen.

Dandelion

BY NELLIE M. GARABRANT.

[To get the full effect of the following dainty bit of verse, read it aloud:—Editor.]

There's a dandy little fellow
Who dresses all in yellow—
In yellow with an overcoat of green;
With his hair all crisp and curly,
In the spring-time, bright and early,
A-tripping o'er the meadow he is seen.

Through all the bright, spring weather,
Is seen his yellow feather,
As he wanders o'er the hillside down the road.
In mossy hollows damp,
Where the gypsy fire-flies camp,
His companions are the woodlark and the toad.

Spick and spandy little dandy,
Golden dancer in the dell!
Green and yellow happy fellow,
All the children love him well.

But at last this little fellow,
Doffs his dandy coat of yellow,
And very feebly totters o'er the green—
For he very old is growing,
And with hair all white and flowing,
A-nodding in the sunlight he is seen.

The little winds of morning
Come a-flying through the grass,
And clap their hands around him in their glee.
They shake him without warning—
His wig falls off, alas!
And a little bald-head dandy now is he.

Oh, poor dandy, once so spandy,
Golden dancer on the lea!
Older growing, white hair flowing,
Poor little bald-head dandy now is he!

—*Canadian Bee Journal.*

A Swarmy Season

In northern Illinois the season of 1912 has been perhaps the swarmiest on record. No doubt the heat coupled with the great dampness had something to do with it. When a young queen is reared in a hive and begins laying, we figure that there is no need to count on any swarming from that hive before the next year.

Well, this year we had two cases in which a young queen was reared in the hive and began laying beside her mother, and yet those young queens issued with swarms. It was not because these two queens were reared so early, for a queen reared very early may be counted somewhat as a queen reared the previous year. In No. 7 the young queen did not begin laying until after June 11. In No. 64 the young queen did not begin laying until after July 11. And yet that miserable youngster came off with a swarm Aug. 26.

It seems that there has been trouble elsewhere with swarming. In the British Bee Journal is given the following case of one of the British sisters:

"A lady began bee-keeping with a 4-pound swarm, hived on May 20 on eight sheets of foundation. As the queen was not fertile a week later, two frames of brood were given to the colony. By June 28 the queen had filled every available cell with brood and the bees began a case of sections. On July 12 a 5-pound swarm issued from the hive, and as the honey season was considered at an end it was not returned, but placed in a new hive on six sheets of foundation and one frame of brood.

The next day, the 14th, was very hot, and a splendid honey day, and, strange to say, the bees of this last swarm must have made up *their* minds to give off a swarm for this issued on the 19th, leaving three frames of bees, an abundance of eggs, and four queen-cells, some of them containing larvæ apparently two days old. This small colony was given a frame of brood and a ripe queen-cell and will doubtless soon become a vigorous colony.

I need hardly say, perhaps, that the queens which have played these "pranks" and their relatives will be dethroned before the winter.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

More About Co-operation and the Middleman

In my small article on bee-keeping and accounting in comment on Mr. Foster's article in the June issue of the Bee Journal, I seem to have started something.

I had no idea I was so far behind the times. In my simplicity I had taken for granted that the principles of accounting applied equally to all other business as well as the retail lumber business. But, according to Mr. Foster, it can not be fairly applied to bee-keeping. Again I learned that I was entirely wrong in figuring the labor account in bee-keeping. Instead of charging the bees with only the actual time for the work of caring for them, I should have followed the example of the "Professional Snow Shoveler," who, on account of making a living for himself and family, insisted on charging prices accordingly for the few days he did have work at his trade in this climate. There is one matter mentioned by Mr. Foster on which we seem to agree, that is where he marketed his honey direct to the consumer, and made him pay an additional price for the completed service, a thing which, when done in part by the middleman, is quite generally regarded as a serious offense against morals, and the vested rights of the producer and consumer.

But these few cases of getting the goods to the consumer mentioned by Mr. Foster were easy. Take the case of the Iowa farmer, wanting a couple of boards from Washington to repair his hay-rack, or one piece of oak from Arkansas to repair his machine, or one thin poplar board from Tennessee to fix something about the house. Even that panacea for all the ills of the markets, the parcels post, with all its possibilities of graft and subsidy, would do no good. After working the telephone to all the neighboring towns, in the hopes of salving a nickel, he would still have to knuckle to the conscienceless "lumber trust," in the person of the retail dealer, as the cheapest source of supply.

This question of doing away with the middleman is as old as the oldest recorded human history. It seems to be one of the unsolved problems coming down through all recorded time. If there is any cheaper way to accomplish the services performed by the middleman, it surely would have been found by this time. To all appearance he will be with us up to the time when the producer and consumer shall have no further occasion to produce and consume. In the meantime, the middleman will insist on getting enough compensation for his services so he and his family can live, *provided he gives his services at least as cheaply as anybody else does.*

In regard to returns on money invested, Mr. Foster's ideas are surely exaggerated when he expects them to at least equal prevailing rates of interest on money. I can assure him there are many owners of Iowa high-priced land that would be willing to give something for information of a sure way to rent their farm land for cash to net them in an excess of 3 percent on its marketable value.

Mr. Foster, in his off-hand way, says that the labor required for caring for bees amounts to $2 00 or $3 00 per colony. This might apply to a few colonies, but in case of a large number of colonies it looks like a "watered" labor account, after the manner of some of our great corporations issuing watered stock as bonuses or melons, this rolling and thinning out actual investment, so as to properly cover up the enormous profits.

Now, Mr. Foster is a bee-keeper, and if he keeps records he can give us the exact figures in his case. If he keeps no complete accounts, his guess is of little value as against actual records. With these few comments, I will be pleased, on my part, to close this unexpected controversy. It does not appear to me that any actual general information of value can be secured by a lot of statements unaccompanied by actual facts, or by appeals to that time-tried prejudice against the "unholy profits" of the middleman.

Yours truly,
Madrid, Iowa. G. W. FEHLEISEN.

I gave my accounts in the June issue, and Mr. Fehleisen has not given his. I might say that a good western bee-man can do the bee-work for 100 colonies in about a month's time, but he will work more than 8 hours to do it, and perhaps 7 days in the week during the swarming season. The whole family generally help, so that as this additional help is not counted in, it is pretty hard to give exact figures. One dollar for supplies for a hive is the general estimate here in the West, where comb honey is produced. My figures showed only 83 cents per hive. If Mr. Fehleisen will set down as full an accounting as I have done in the June issue, I will be glad to see it. My accounting for 100 colonies there shown is better than I have averaged for a 5-year period.

Mr. Fehleisen is not imbued with the spirit of the co-operative movement; he does not realize that this working together of producers is broader than parcels post, the marketing problem, or the elimination of the unnecessary middlemen. The co-operative movement is an expression of the growing mind and heart of the people. Producers are getting together in Iowa under the leadership of Holden, and are raising more and better corn—that is one phase of the co-operative movement. Western fruit men are getting together in grading and packing schools where they can learn to put up a box of apples; not one with a worm in it, and every apple larger than 2¼ or 2½ inches in diameter. An absolutely honest pack is being put out in a half dozen western States, fostered by the fruit associations. This is another phase of the co-operative spirit. Producers in Europe have the parcels post, and the demand for it here is an expression of the co-operative spirit which seeks to have the utmost of efficiency in production and distribution.

Every successful co-operative association is proof that it is more economical than the competitive method. If it were not, the co-operative association could not last. The greatest benefit of co-operation is that it makes the producers honest. If they ship with their fellow members, each has to put up honest goods. There is no chance of beating the buyer, as is so often tried by producers selling to dealers.

I do not think that producers are any more honest than any other class of men; they are human, but the co-operative method of distribution tends to make them honest. The members soon catch the spirit of co-operation, and they become better men. Co-operative associations are in a limited way doing the work of distribution where direct dealing with the consumer is impracticable. We probably never will have a direct dealing in all lines between producer and consumer. Distribution is in a sense a part of production, and is the field for the activities of the co-operative association.

Mr. Fehleisen considers the middleman a permanent fixture, while I consider him a temporary means to be employed until we have direct dealing and co-operative distribution in successful operation. If the middleman can distribute goods as cheaply as it can be done by direct and co operative effort, the middleman will be with us for a long time. That is the question. Mr. Fehleisen thinks he can, while I believe that the producers and consumers will find greater profit to themselves to take over distribution along more economical lines. Sentiment will not rule here. Producers and consumers will not allow an undue tax to be exacted for the act of distribution when they get wisdom enough to organize and keep more economical systems in operation. And I am satisfied that they are learning.

DESCRIPTION OF NATIVE AND IMPROVED HIVES AT THE COMMON SCHOOLS IN MANOUA, TUNIS—(See page 295).

Swarming in the West

The increase in bees has been large this season. Swarming has been a problem to the extracted-honey men as well as the comb-honey producers. The increase has been as high as 300 percent in some apiaries near Denver. Many swarms were lost through lack of hives to hold them. Queens were the easiest to rear that I have ever known, and nearly everything superseded, sometimes twice during the summer. Swarms were still issuing Aug. 25 in some of the Arkansas valley apiaries. Colorado is not alone in this swarming proposition, as Idaho had a like experience. Not having any reports from other western States at hand, this is all that I can speak for, but the season was such that Utah and Wyoming probably resembled Colorado and Idaho in the matter.

THE HONEY CROP.

Colorado very nearly made up her loss in bees of the past winter in the increase by swarming, and honey will be shipped this year in about the same amounts as in 1911. The Western Slope will not have as much shipping of honey as last year. The Arkansas valley will have more comb honey and a great deal more extracted. Northern Colorado will have about the same as last year, if not more. Reports from northern Colorado are a trifle conflicting. If I should write this 10 days later I could give a more accurate report. Idaho will ship more honey from the southern and western portion, and less from the eastern part if my informers have had yields indicative of the whole districts concerned. The quality of the comb honey in northern Colorado is below the average, our crop near Boulder being a decided yellow.

THE HONEY MARKET.

Comb honey buyers have bought the most of the honey in Idaho and eastern Oregon at $2.75 for No. 1 and $2.50 for No. 2. This is considered a good price when freight rates are noted. The honey was contracted for about the first of August. Idaho and eastern Oregon have a whiter honey than that of most of the Colorado districts, but their grading methods are not as close as those stipulated in the Colorado rules. Quite a large amount of cull honey is included in the No. 2 grades, and a rather wide latitude is given to the No. 1 grades. The shipping-cases used are of cheaper construction, as a rule. The claim is made that there is far more money in putting up comb honey, as they do in Idaho and some parts of Colorado, and selling at $2.50 and $2.75 than grading more closely and getting $2.80 to $3.25. It certainly takes less time and effort than where one follows the new rules closely.

Comb honey is selling in the Arkansas valley at $3.00 to $3.10, and sales being made about as fast as the producers can get the honey ready. There will be but few carload shipments of comb honey from the valley this year on account of the demand in Kansas for local shipments. A sale was made late in August of nearly a car of extracted honey at $8.50 a case of two 60-pound cans. In local shipments of more or less size the price is $10 a case with good sale. Bulk-comb honey sells faster than the producers can cut out their baits and fill the cans with them at $6 00 for a 60-pound can. A few get $6.50 for this honey.

In southwestern Colorado comb honey brings about $2.10 a case; the price would be better if the freight-rate was not so prohibitive, making it impossible to cater to anything but a local market. Extracted honey, however, brings 8 to 10 cents a pound, which helps even things up a trifle. There is not going to be a large amount of comb honey left in Colorado after Christmas, and this is as it should be. There are a great many bees for sale in the State this year, and any one wishing to get a foothold should have no trouble in buying an outfit at less cost than moving a carload into the State and crowding some other bee-keepers' territory, or perhaps making him think he is being crowded.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

What Strain of Bees is Best for Southwestern Texas?

One of the difficulties the apiarist has to contend with in this part of Texas is the long-continued drouth, although taking the State over, I don't suppose it is more subject to drouths than many others. It is a very large State, and portions of it are almost a barren desert.

The extreme drouths are mostly confined to central west and southwest Texas. When they prevail it is next to impossible to get the bees to breed up; all vegetation dries, and there is practically nothing for them to get in the way of either pollen or honey. Queens stop laying, the bees cluster on the outside of the hive, and the novice is often led to believe that they are preparing to swarm. This goes on from day to day, even weeks, then a shower comes, followed with more or less bloom, and the queens soon fill the hives with eggs, but by the time the mesquite pronounced meskeet) blooms, which is from three to four weeks after the rain, the old bees have died off until there are very few left to gather the harvest. Such is the case here at the present writing. We are having a fine mesquite flow with very few bees to gather it.

We often resort to feeding at such times, but unless there is something to furnish pollen, that is a failure, for the bees do not develop the eggs into brood.

Some 30 years ago, when the Cyprian and Syrian bees were imported by D. A. Jones and Frank Benton, we gave them a trial with the hope of overcoming this trouble. They were said to be great breeders by the late B. F. Carroll, of Dresden, Tex., and others that were favorably impressed with them.

They were an improvement over the Italians as breeders, and perhaps as workers, but their extremely cross disposition was too much for me. I have since kept more or less Carniolans, and their crosses in one of my out-apiaries, but their excessive swarming, when everything is favorable, makes them undesirable for an out-apiary, although they are good workers and comb-builders. I would be pleased to hear from Mr. Louis Scholl, or others who have tried the Caucasians in the South, where we have these long drouths. L. B. SMITH.

Rescue, Tex.

Now, Mr. Smith, you leave the impression that we have an awful land here in Texas, when you lament about the serious drouths that we have to meet sometimes. But is it not a fact that these drouths do not exist in all parts of the State at the same time, and that they do not always affect the honey crop? We may say that we make just as good honey crops in various localities, with a long drouth at some time of the year, if we only have a fall or winter season to aid the plants and trees in nectar-yielding the following spring or early summer. Mesquite is one of these.

I hardly think that we can overcome the difficulty mentioned by you with any race of bees as readily as we might with the proper management and manipulation of our colonies. I know that there are localities in north Texas where long, continued drouths exist between the early spring and the fall honey seasons. It is impossible to keep the colonies over this dearth successfully by leaving the honey on the hives, for the reason that they will breed heavily until it is all used up. They may even swarm during the dearth and the swarms be lost by starvation unless fed or supplied with honey. To prevent this I recommended, many years ago, to take away the combs of honey and keep them stored so that a few at a time could be given when actually needed. This would help to discourage the heavy breeding and swarming during the drouthy period. Tiding the colonies over the drouth in this way would keep them in normal strength; but with some extra labor, however, they would be in good shape for the cotton honey-flow from which the main part of the honey-crop is realized.

Another remedy that I have suggested is the planting of sweet clover, so that a moderate flow of nectar may be created during the drouth period. Since this generally lasts during May and June, sweet clover comes in very nicely, as it begins to bloom and continues over the entire drouth period that usually plays havoc on the colonies as related by Mr. Smith.

This same question came up at one time when I attended the North Texas Bee-Keepers' Association meeting. I recommended the aforesaid two remedies to be tried out by the bee-keepers who were thus located. What the results were I have never learned, but being interested in these things, as well as all information on apicultural topics of the State of Texas in the capacity of Apicultural Expert of the Texas Department of Agriculture, it would give me great pleasure to hear from some of the north and central Texas bee-keepers on this subject.

For the benefit of those who have not a copy of my recent bee-bulletin, the following concerning sweet clover is herewith reproduced:

WHITE AND YELLOW SWEET CLOVER.

As a general rule none of the clovers thrive well in this State except the sweet clovers—white sweet clover *Melilotus alba* and yellow sweet clover (*M. officianalis*). Seasons over most of the State are too dry for the white clover, from which the greater part of the honey of the northeast is produced. There are a few localities in the south Texas coast country, however, where this grows well.

In many places in Texas there are periods during which there is no bloom from which the bees can obtain even enough honey for the sustenance of their colonies. These dearths, between honey-flows from natural sources, are sometimes very long ones. In some localities they occur between the spring and fall flows, and are very serious, as the bees sometimes starve during their continuance unless fed. Feeding bees at these times is objectionable, because it incites robbing and stimulates the bees to unnecessary brood-rearing, besides using up a large quantity of food. In such cases, planting of sweet clover beforehand, to tide the bees over, might bring good results, as the clover, if it thrives, will come into bloom and yield nectar during the time. There is great variation in the length of these dearths in various localities, beginning and ending soon in some and late in others. In many places the gap may be filled entirely by the blooming period of sweet clover, which begins about June 1 in most localities, and a little earlier in other and more protected situations, and depending also upon weather conditions. The yellow variety begins to bloom several weeks earlier in the season. Either variety, however, would cover the period of the average dearth, and the melilotus blooms very well in favorable seasons when planted in localities favorable to its growth. In situations not so favorable, and during dry seasons, the blooming period is shortened considerably. However, it generally extends during June, July and August.

Sweet clover grows well after it is started, and waste places, in which are found the poorest soils, can be planted with this forage crop for the bees. There are thousands of acres of such waste land that could be made to grow sweet clover in the place of weeds. Our fence rows would be worth thousands of dollars if sweet clover grew where weeds of no use whatever now disport themselves. Especially would the clover be valuable where the nectar yield would be produced just at a time when there was nothing else in bloom.

It was once feared that sweet clover was a noxious weed that spread rapidly and was hard to kill out of a field. This apprehension has been proven to be baseless, since a single plowing will kill the clover, and there is no danger of its spreading out of its bounds. It grows well in the northeastern part of the State, where it has become abundant in various places. It needs little attention in localities where the atmospheric and soil conditions are not too dry. In the dry parts of the State west and southwest Texas it is hardly advisable to plant sweet clover except in some of the lowland fertile valleys and along streams It has been found that it grows luxuriantly when drilled in rows and cultivated, but it would hardly pay to do this as a forage plant as its growth is large and coarse.

The seed should be obtained in the fall of the year and scattered in waste places and along fence rows, and rains will beat it, in

It s best where grass and weeds do not crowd the plants out. When once started it re-seeds itself. Being a perennial it does not bloom until its second season's growth.

Sweet clover honey is of good quality, light in color, and of very good flavor. The bees work industriously on the bloom from early until late.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Ontario Bee-Keepers' Association Will Meet in Convention

The Ontario Bee-Keepers' Association will hold their annual meeting in Toronto Tuesday, Nov. 12. The program is not ready, but as soon as it is prepared due notice will be given, also information about railway rates, hotel accommodations, etc. Needless to say, as usual, we are expecting a large attendance of Canadian bee-keepers and a big bunch of our cousins from "over the line." At the season of the year when the convention is held, most of the bee-keepers' work is done, and a holiday certainly does one good after the busy months of the summer season.

One unfortunate thing in connection with the date of the convention is, that it prevents many of our best bee-keepers from attending, as a lot of them are nimrods, and are away at that season on their annual deer hunt in the northern woods.

In speaking of this, I am reminded that at the north yard, established this spring, an occasional deer wanders in among the bees, one being seen in the apiary a few weeks ago. Just how the bees treat their pretty visitors I am not prepared to say, as I have not seen any in the yard when I have been there. As there are also a few bears in the same locality, I have been wondering if they would visit the apiary later on, but I am not anticipating any harm from depredations on their part. However, if any should decide to visit the apiary, I hope it will be when some one is around so that I may have the privilege of treating some of the convention visitors to a "slice of bear steak." Certainly, I would like to have a menu of that variety to complete the anticipations of a friend in the States, who said he was taught in the schools that up in Canada the winters are so cold that often the inhabitants have to drink raw oil to keep from freezing to death. Bear steak and raw oil should be warm enough diet to satisfy the most cold-blooded mortal on the continent.

Little Nectar in Buckwheat

The long, cool, wet spell has stayed right with us all through August, and as a result the many acres of buckwheat have yielded little nectar, and heavy feeding for winter will be necessary to keep the bees from starving, as in all my experience I have never seen brood-nests so full of brood as they are now (Sept. 7). The bees have seemingly just enough to stimulate brood-rearing, and the hives denote June conditions rather than September. September, to date, has been warm and sultry, and this is aggravating the situation, for the fall flowers are yielding just enough to keep up this heavy brood-rearing. Italians, which are usually very conservative about brood-rearing at this season of the year, are as bad as Carniolans. This means not only a heavy feeding, but late feeding as well, as it would be folly to do any feeding under present conditions. Mr. Knox, of Orono, Ont., has sent me a reading of the thermometer from Aug. 17 to Sept. 5, and a glance over it will show why the buckwheat was a failure.

		Morning Deg.		Noon Deg.		6 p.m. Deg.	
Aug.	17.	50,	cool, cloudy at night				
"	18,	50,	" "				
"	19,	60,	cloudy all day	70.		64.	
"	20,	62,	sunshine at Markham				
"	21,	62,	" "				
"	22,	60,	foggy			70,	rain
"	23,	54,	sunshine	76,		50,	"
"	24,	47,	rain	62,	rain,	58,	"
"	25,	65,	sunshine	88,		70,	
"	26,	66,	rain	80,	"	64,	
"	27,	60,	clear, windy	70,			
"	28,	50,	cloudy	50,	rain,	52,	
"	29,	54,	sunshine	70,	sun,	50,	
"	30,	42,	"	71,	"	48,	
"	31,	52,	rain.	70,	"	54,	
Sept.	1,	58,	"	72,	clod'y	50,	
"	2,	58,	"	70,	rain,	60,	
"	3,	64,	cloudy		sun.		
"	4,		sunshine	80,	"		
"	5,		sun and rain	86,	"		rain

In our section we had some early buckwheat, and during the first week of August three or four hot days. During these days the flow was very heavy, and we looked for a big crop of buckwheat honey. As it is, 5 of the 7 yards have each about one full super, while the other 2 have not that much. I there is enough to pay the feeding bill, it will be better than nothing, anyway. All this wet weather had one good effect for the bee-keeper; that is, the clover is wonderful all over, and, barring winter killing, the prospects are good for next year from that source.

Are Queens Fertilized Near the Hives from Which they Issue?

Whether queens, as a rule, fly a long distance from the hive when on their mating flight is, I believe, a mooted question. Some observations in a small apiary of mine lead me to believe that most of the queens are fertilized near the hives from which they issue. Some 6 or 7 years ago I placed about 20 colonies with a friend who had about the same number, and the apiary consists of about 50 colonies at present. Mine were placed about 6 rods to the southeast of those of my friend, and between the 2 lots there is a heavy growth of fruit trees, mostly apple and plum, with shrubbery underneath the trees. My bees were mostly Carniolans, while the others were native blacks of a nervous, cross disposition.

After these years of close neighboring, my yard is still largely Carniolan, while the other bees are as black and nervous as ever. I expected a general mixing up, and still expect it, but I am surprised at the way the two different lots have preserved their identity, and can form no other conclusion than the one advanced.

Experimental Apiary, Manouba, Tunis.

Glad Reciprocity Was Not Carried

Speaking of crop and price conditions, in the Bee-Keepers' Review for September, Editor Tyrrell says that first-class honey should command not less than 9 cents, wholesale, in 60-pound tin cans; this is, I believe, in reference to raspberry, clover and basswood honey. As we are readily getting 11 cents per pound, wholesale, for our honey in Ontario, it is needless to say that many of us are not sorry that reciprocity was not carried into effect a year ago. Without that 3 cents per pound duty on honey coming into Canada, how long would we get 11 cents? Extracted honey of first-class quality at 9 cents is *altogether too cheap* when compared with the price of other food products, and it is time bee-keepers were organized so that such a condition of affairs can be remedied.

◆

Out-Apiary 200 Miles Away

On Monday, Sept. 9, I expect to leave for the east yard, some 200 miles away, to take care of the buckwheat honey and get the bees ready for winter. My son came home Aug. 1, and since that date we have not been there. After getting the bees ready for winter, we will not see them again until next May. A competent man will put them in the caves in November. Long range bee-keeping of this nature has some drawbacks, but it affords pleasure, as the trips give one an oportunity of seeing the country, and it breaks the monotony of life. The expenses of traveling are an item to be considered, but with bees in different places, one is not so apt to meet with a complete failure all around. However, 200 miles is a little too far, and next spring we contemplate moving this lot nearer home, provided a suitable location is found.

◆

A Swarm of Bees in September

With little nectar coming in, and that *little* coming nearly every day, the bees seem to think that June is here instead of September, and Sept. 4 a bouncing swarm came from a colony headed by a queen of this year's rearing. This is a new record in my experience, and instead of returning it to the hive which would no doubt have been the most *profitable* thing, I hived them on drawn comb and gave them two combs of brood as bonus. With winter stores supplied, I see no reason why they should not survive the winter. If a "swarm of bees in July is not worth a fly," what about a swarm in September?

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Carrying Honey Over Until Spring

It will be almost impossible to dispose of all the summer crop of honey to the best advantage before it granulates on the market, and thereby gives trouble. This will especially be true for the large producers. As the market is well supplied sales will be slow, as cold weather is near at hand, and most of the honey will granulate, it will be best to only remove what we have sales for. As soon as cold weather is here, shut off the sales and leave the rest on the hives until spring. It can then be removed and put on the market before the spring flow begins, and as there will be great demand for it, it should sell at a good price.

At the approach of cold weather the honey should be equalized among the colonies, so the bees can take better care of it; for if a large surplus is left on some of the hives it will get cold above the cluster and stay thus during winter. It is not best to keep too much honey on the hives for this reason. I have kept as much as one super of surplus honey on many colonies during winter, and I have had a fine lot of honey for the early spring trade.

◆

A 3000-Mile Trip Visiting Bee-Keepers

It is my greatest desire to know the end of all things relative to bee-keeping within the bounds of Dixie, that I may impart the information thus obtained to others.

To do this, and do justice to my business, I must make tours visiting progressive bee-keepers all over the territory as often as time admits. My longest trip, which was about 3000 miles, was made this summer. It is needless to state that what I saw of our industry would make a large volume, and much of it would be practical and instructive. I will use some of the information thus collected as space and time permit.

I saw a number of bee-keepers who produce honey by the carload, and apiaries where all colonies were keeping pace storing; no colonies running ahead or behind, but were on equality in strength and storing. These bee-keepers were expert queen-breeders as well as honey-producers, and kept a close record of everything. Some bee-keepers were badly discouraged because other lines of business had completely crowded out bee-keeping. But the greatest number were those who had taken up bee-keeping as a side issue. They were greatly encouraged over their venture, because the returns had been good and losses few. They expressed themselves as not even thinking of laying aside bee-keeping, for they could not afford to.

Lots of beginners were at the front with their few colonies of bees, and asked a good many questions on bee-culture. Nearly all of this class of bee-keepers wanted me to give them the "royal road to bee-keeping," so they could soon and easily become extensive bee-keepers. This, I told them, can only be done by constant study and work.

Summing up the whole trip, I must say that I am delighted with the progress of our industry, for I saw and heard things about it that I had never dreamed of. After all, our industry is not so small here as it is supposed to be, and taking under consideration our fine climate and the great variety of honey-plants, it has a great future.

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The Proper Way to Start Bee-Keeping

We became interested in bee-culture in 1897, and began working with some of our pioneer bee-keepers, namely Mr. A. B. Marchant, Mr. S. S. Alderman and Mr. C. F. Glenn, all of whom are widely known as apiarists of knowledge and experience.

In 1900, we bought 100 colonies from Mr. Marchant, costing us about $6.00 per colony when we placed them on stands in our yard. The first season we actually got 30 barrels of honey from that 100 colonies of bees. This was an exceptional flow, and is still talked of. We have never had such a flow since. The following two years, 1901 and 1902, we did not get any honey. But we have had small flows each season since, averaging about one-third of a crop each year, counting it on a 10-year basis. We have never had any trouble in marketing honey. It has proved to be a profitable investment, even with failures and short crops. It is pleasant work, and both of us take great interest in it.

Our apiary is located at Kentucky Landing, on the Apalachicola river, in the heart of the tupelo belt. At one time we had a good many Italian bees, but owing to wild bees and other apiaries they have bred back into almost black bees. Still, at the time we had the Italian bee we also had the black bee, and there wasn't any difference as to the amount of honey gathered. It was rather in favor of the black bee.

We are, at this time, requeening every colony in our yard, of which there are more than 200. We use regularly the 10-frame hive with Hoffman frames, and produce only extracted honey. We have our wax made into foundation, and sell surplus, if any, after we have sufficient foundation. Rish & Brother.

Iola, Fla.

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A Large Apiary in the South

Mr. J. R. Hunter, of Wewahitchka, Fla., handed the writer, while on a visit to him this summer, a snap-shot of one of his apiaries located on the Chipola river in west Florida, in the great tupelo gum region. This was a picture of 250 colonies, all run for extracted honey. The picture which is here produced would very well illustrate an article in the Dixie Department for August, answering the question, may bee-keeping be resorted to as a sole occupation which will bring sufficient returns for a livelihood. The thrift of this apiary denotes that it does in this instance at least. The amount of capital invested is very small, but coupled with energy and a great love for the work.

In our department for September the picture and article show that we can invest capital in bees and turn them over to trustworthy and energetic people and receive good returns from the investment. Now this article, with picture, shows how tidy any apiary can be kept even if it is very large.

There are many apiaries that show

to some extent dilapidation through neglect on the part of their owners. This ought not to be. This picture also shows to what extent the industry can be carried on here, and that very large apiaries can be established in certain sections. We do not have to go to California or some other great bee-country to find large and well cared for apiaries, for we have them in our own limits.

The scrubby, thick bushes in the background are spring titi, which is our first honey-plant of any consequence in early spring, begins yielding in February and lasts until our great honey-plants commence blooming. The titi is indeed a great honey-plant.

Mr. J. R. Hunter is a young man of sterling qualities, and will surely be heard of from time to time. He is very enthusiastic over bee-keeping, and is now making it his main line of business.

Apiary of J. R. Hunter, of Florida.

CONTRIBUTED ARTICLES

How Bees Feed One Another

BY G. M. DOOLITTLE.

"I have a puzzle on hand and would like to have an answer to it. I have been using what is called a queen-nursery. These are cages made of wood and wire-cloth for the purpose of holding queen-cells away from the bees until the young queens emerge from the cells. And as these young queens need not be taken out of these cages just as soon as they emerge, a hole is bored in the wood which is filled with a sponge having honey in it. In this way the young queens can get feed until the bee-keeper wishes to use them as necessity requires. At least, such is the theory put forth for the advantages of this way of keeping queens.

"But I find that in use more than half of these young queens die before they get to be from 3 to 5 days old. They seem to be unable to help themselves to this honey in the little sponges sufficiently to sustain life.

"Now for the puzzle: All know that a young queen, when first emerging at maturity, is a weak, white, downy thing, often hardly able to cling to the combs, but with each hour getting stronger until, when about 2 days old, she seems to reach her normal strength, and where there are rival queens in other queen-cells, which are held back in these cells by the bees, this queen, at liberty, utters shrill peeps as she goes about in the hive. This is called the 'piping' of the queen. If bad weather keeps the colony from sending out an after-swarm at this stage, other young queens still held in the queen-cells by the bees, answer this piping, but in a muffled sound, as I suppose the walls to the cells holding them keep them from making so loud a noise as does the one at liberty.

"Now, what I wish you to tell the readers of the American Bee Journal is this: How do those queens in the cells live after arriving at maturity? If many of the queens in the nursery-cages, with plenty of honey within easy reach die, how can these queens, kept within the walls of their cells, a space scarcely one-twentieth as large as that in the nursery-cage, with no provision for their food live? Last swarming time I cut out 17 queen cells from a colony where the second swarm had been kept back 5 days by bad weather, and before I had set the last frame back in the hive for the returning of the swarm, 14 or the 17 cells had hatched and the young queens flown away."

Thus writes a correspondent about something which has puzzled hundreds, if not thousands, of bee-keepers all through the past, and I was equally puzzled for several of the first years of my bee-keeping life. One year I had a colony where I heard the first young queen piping on the evening of the eighth day after the prime swarm had issued from it. On going to the house I told Mrs. Doolittle that this colony would swarm the next day, as I had heard the queen piping therein. With the next morning a steady rain set in, which lasted for three days, when it became cool and cloudy for two days more.

On listening at the side of the hive near nightfall, at the end of the fifth day after I had heard the first queen piping, I was amazed at the turmoil I heard. The first queen would pipe, when immediately there was a chorus of muffled "voices," some of them being kept up until the queen, at liberty, would pipe again, when the whole "band" would strike up once more, so that there was hardly a second of time that there was not "music" for the whole force of worker-bees to "dance by." I resolved that in the morning I would open this hive and see what I could find.

As the morning proved fine, 6:30 o'clock found me with the hive open and a frame with the bees and two queen-cells in my hands. With a little smoke I dispersed the bees from these cells, which were near together, when, presently, I saw a tongue poked out through a slit in the capping to the cell where the capping is usually cut out when a queen emerges. This tongue was stretched out as far as it could reach, when, at that moment, a bee returning from being driven away with the smoke, put its mouth down to the tongue, and, in the morning sunshine, I could see the honey sparkle on the tongue of the young queen, as "she took her breakfast." Soon the queen in the other cell put out her tongue and was fed in the same way. I then shook the bees off of this comb a little way in front of the entrance, spreading them along so it would take some time for them to crawl in, and watched for further developments from the queen-cells.

The tongues came out again, this time apparently as "feelers," to see if there was the usual knot of bees over the cell to keep them in, but finding nothing, a little clipping noise was at once heard, and in less than a minute the cover on one of the cells was raised and a fully matured queen stuck her head out, the cover to the cell having been nearly cut before this, as the whole cutting, except the little slit where the tongue came out, could hardly have been done so quickly. The head was drawn back again, as if fearing it might be unallowable for the body to go out just yet. Then out it came again, drew back once more, when, with the next move, the queen was fully out, ran about on the comb for a second or two, and apparently hearing the humming of the bees going in at the entrance, which I had shaken from the comb, she took flight, sailed around three or four times, alighted down with the bees and ran into the hive. I still held the comb in my hand, only to see the same thing done by the other queen. As I wished no second swarm from this hive, I shook the bees from all the frames, destroyed every queen-cell found, and closed the hive.

The next morning I found two dead queens in front of this hive, showing that a "mortal combat" had taken place between the queens at some time during the 24 hours. All swarming for the season was given up.

This proved to me that the bees could keep queens in confinement, even in so cramped a place as the walls of a queen-cell, much better than we bee-keepers could with all our knowledge, and in the larger apartments of a nursery-cage. It also proved to me that bees were ever on the alert to provide for any and all queens which they were desirous of preserving, feeding them as much as was required for their posterity; while, if they did not wish queens that were thrust in their midst in such a way that they could not get at them to kill them, they could, by some means, persecute them so that many of these imprisoned queens would die, even where the apiarist provides plenty of food for them.

This is illustrated at its best by caging the mother-queen in a wire-cloth cage without any food therein. The bees will almost constantly offer her food by putting their mouths against the wire cloth with the food so you can see it sparkle in the mouth; when the queen, if she is in need of food, will take it (through the meshes) by reaching out the tongue, and thus she is kept in good condition for days, and sometimes weeks. Put a strange queen in this same cage, and she might die of starvation in a few hours. Yea, more, put plenty of food in the cage, so that no other bee save the caged queen can reach it, and the bees will so torment this strange queen, by getting hold of her legs and wings, and pulling at them, that she will rarely live a week.

But the thing that puzzles me the most is how the bees in a cluster, hanging down below the frames when wintering in the cellar, are fed through the 4 or 5 months they are confined therein. We are told that these bees are constantly changing, and that the ones which form the crust, or outer circle of such a cluster are going inside every few minutes or hours; warm bees from the inside taking their place, while these cold, hungry bees go in and feed and get warm, and thus the whole colony is fed and "clothed" during their stay in the cellar. But I have watched hours only to see those cold, stiffened bees stay right in that same position so still and quiet that any one would pronounce them dead, did they not know to the contrary. Who can tell us about this part of the matter?

Borodino, N. Y.

Possibly a "New Kink" in Introducing Queens

BY ARTHUR C. MILLER.

It is passing strange how conservative humanity is, and sometimes it seems as if bee-keepers were more so than the rest. Now, there is the matter of queen introduction. With relatively few exceptions they all hold that odor is the governing factor in a queen's reception, and a queen must be caged in a colony until she has acquired the colony's odor before she can safely be released. The loss of so many queens by the cage method of introduction seems not to make the slightest impression on the holders of the theory. That queens can be scented with all sorts of odors, many of which do excite the bees to stinging (as the odor of a sweaty horse, etc.), and yet to be safely run into an alien colony affects them not at all. The negative evidence of the cage is of more weight than the positive evidence of the scented queen cordially accepted before their eyes. The blind following of ancestral practice is woefully out of place in this day.

The direct introduction of queens is the easiest thing in bee-culture, if one will only bear in mind the laws of bee-behavior, and conform thereto. It is far from a new practice, but owing to the lack of knowledge of the underlying principles, it has not proved any more uniformly successful in the average person's hands than the cage system.

Without repeating the details of the "fasting" plan of direct introduction, as well as several others, a plan which has not yet failed will be given and an effort made to explain why it works.

A colony to receive a queen has the entrance reduced to about a square inch with whatever is convenient, as grass, weeds, rags, or a block, and then about *three puffs* of *thick, white smoke* (because such smoke is safe) is blown in, and the balance of the entrance closed. In from 15 to 20 *seconds* that colony will be roaring. The small space at the entrance is now opened, the queen runs in, and the space is again closed and left closed for about 10 minutes, then re-opened and the bees allowed to ventilate and quiet down. The full entrance is not given for an hour or more, or even until the next day. The queen may be picked from a comb and put in at the entrance with one's fingers, or run in from a cage just taken from the mails, her attendants running along, too. The results are all the same. The alien queen and workers are quite as much at home as are the real owners of the hive.

It makes no difference whether the receiving colony has just been dequeened, or has been queenless for several days, or even has laying workers, though colonies with such should be united with a normal colony. They are not worth requeening. But right here two conditions must be cited, or the bee-keeper not familiar with bee-behavior will experience trouble sometimes. Colonies with sealed queen-cells, or with a virgin queen, will sometimes "supersede" the new queen in a few days if that queen has been kept from laying for several days prior to her introduction. A queen taken fresh from the combs, where she was laying freely, will generally cause the destruction of the cells or the virgin.

To such colonies it has been found advantageous to give a comb with eggs and young larvæ just before running in the queen. The queen-cells may be looked for and destroyed or not, but so far as the writer has experimented, it is not necessary to destroy them, the bees attending to it. If, however, the colony is strong and honey is coming freely, a swarm may issue if the cells are not destroyed. More exhaustive observation is needed in this phase of it before it is wise to make positive statements. But with a virgin present the eggs and larvæ will make certain the new queen's favorable reception. The mere adding of eggs and larvæ to a colony with a virgin will almost invariably cause her disappearance. And it is impossible to ensure the safe introduction of a virgin to a colony having eggs and larvæ.

The loss of virgin queens in introduction is due chiefly to one or two causes, to the presence of eggs and larvæ, or to their running out. If to a nucleus in suitable condition a virgin is given near nightfall (because then all the bees are in), and the entrance plugged with a leaf or leaves, the queen will be safe. By morning, the leaves will have wilted so the bees can get out, and matters proceed normally.

It is the writer's preference, in introducing laying queens, to dequeen the receiving colony immediately before running in the new one.

The theory of the cause of the results secured is this: Bees in distress, be they workers, drones or queens, know no enemy or alien, and each one is turning to some other for "help" or food, and every bee which comes within the influence of the uproar of a distressed colony seems to be seized with the same emotion. The bees, with the queen in the cage, as soon as they are placed at the entrance evince every sign of the same disturbance as shown by the bees of the colony, and it takes but a gentle puff to send them in.

The closing of the entrance after the queen is in is to ensure a complete distressed condition throughout the colony, and keeping it closed for the 10 or 15 minutes is to prevent too speedy relief. Also, if the full entrance is opened the bees may pour out in a mass and cause bother; while, by opening only an inch, few rush out before systematic ventilating is taken up.

The inexperienced and the thoughtless need to be cautioned as to two things, closing in a full colony that has no room to get into off of the brood-combs, and closing in a full colony sitting in the sun in the middle of a sweltering day. The skilled bee-master *can* do both of those things, but he does not do it if he can avoid it. And when he does it he stays right on the job keeping eyes and ears open.

The writer has run in hundreds of queens by various direct methods, and has found the foregoing to be the best. He believes it, as a whole, to be original with him. Its trial by all bee-keepers is urged, for it is considered good.

Providence, R. I.

Saving Full Combs for Spring Feeding

BY EDWIN BEVINS.

For three or four weeks during the last of August and first of September no honey was gathered owing to dry weather. Frequent showers for a few days revived the pastures and ensured a heavy honey crop, but grain was damaged in the shock, as the days were very hot. The early crop of honey was very light, but I think the later rains ensured a fall flow of some magnitude.

I have had impressed upon me this season, and for two or three seasons before, the importance of having two sets of worker-combs for each colony of bees. Without these my honey crop this year would be almost nothing. The same is true of last year and the year before. Bee-keepers will, sooner or later, learn the importance of having a lot of combs filled, or partly filled, with honey for use in spring. Most of them, I take it, will be slow to adopt the methods described by Mr. Doolittle in his book, "A Year's Work in an Out-Apiary;" but by some means they should contrive to have a good many of these filled, or partly filled, combs. Their importance is manifest in the production of comb honey, but they

Movable-Frame Hive and Native Hive Protected Against the Sun's Rays in Tunis—(See page 295.)

are not without a large influence where extracted honey is produced.

I had enough of these combs, this season, to fill 12 or 15 hive-bodies, and these were, at the beginning of fruit-bloom, put on as many of my strongest colonies with excluders beneath. There is not enough fruit-bloom here to enable the bees to store much, if any, in these upper stories, and when it is over there is quite a long breeding period before white clover blooms.

The honey in some of the upper stories was all consumed at the beginning of the honey-flow, and in others it was only partially consumed. The upper stories, with little or no honey in the combs, were left to be filled with honey for extracting. The others were placed below, and the bees of the colony shaken in front, and the combs of brood put over weaker colonies and left to be filled with honey for extracting as fast as the cells became empty of brood. A comb-honey super was put over each shaken colony.

From these shaken colonies I got a large share of my comb honey this season, and from the colonies strengthened with 9 or 10 frames of brood I got the largest part of my extracted honey.

As I did not have hives full of combs with honey in them to put over all of my strong colonies at the beginning of fruit-bloom, I put a hive full of empty combs under the rest without using excluders. This was done to retard and prevent swarming, and to give plenty of room. At the beginning of the white-clover flow some of the lower stories had brood in them, and when they were taken away had quite a lot of bees which stayed with the brood and were given either a purchased queen or a comb with queen-cells from a colony that had swarmed.

There are some reasons, I believe, why the methods described by Mr. Doolittle, in his book, will not be generally adopted. Not many will take the trouble to secure and carry over enough combs to supply many colonies. Then not many will take the pains to be sure of always having young queens in the colonies worked by this plan. Without young queens the plan will not be successful. Old ones are unable to be superseded before or about the beginning of the honey-flow, and swarming will very likely take place.

Mr. Doolittle's locality seems to differ with many others. I gather from a perusal of his work that he has honey stored in the upper stories during fruit-bloom; then he has a white-clover flow, and this is followed by a basswood flow. Most of us have to depend upon white clover, and therefore have to use some modifications of his methods.

Nevertheless it is a good thing for any bee-keeper in these northern lands to have a good supply of filled, or partly filled, combs for use in spring, as they can be turned to such good account for the increase of bees to take in the white-clover flow. And, besides, they save a lot of work in feeding.

Leon, Iowa.

Care of Bees for Winter—Production of Extracted Honey

BY E. D. OCHSNER.

This essay took second prize at the Wisconsin State Bee-Keepers' Association Meeting in February, 1912.)

We will start the year at the close of the honey-flow, which is with us after the first killing frost, and with a yard run for extracted honey. Pick out a day when cool or just warm enough so that all shaken bees may arise and get home, as hot days at this time of the year are dangerous and cause slow work.

Right here is where many who are keeping bees in town get into trouble as a little robbing is a sure way to make bees angry, but if they should start robbing, just stop for a few minutes and look your yard over carefully and you will find some that are working nicely, and which, of course, are the guilty ones. Each should receive a wet cloth over the entrance, the robbers being let in from time to time, and then work may be resumed at once.

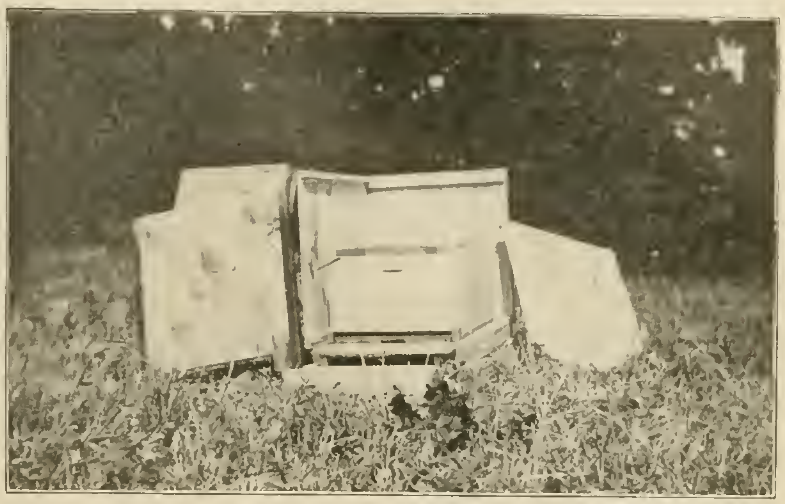
Take out all frames from the upper stories, and place them in empty hives on a wheelbarrow lengthwise. Lift your hive, and if there is not honey enough, take out the second frames from the outside, as that is where the honey should be, and insert a full frame there.

To feed right, and do it easily, take full frames that you should have had left from the last extracting of white honey, as the best is none too good, and a colony for outside wintering should have at least 20 pounds of honey, and be strong in bees. My colonies are all wintered in chaff hives, or packed in *shells* on the summer stands.

Do not shovel the snow from the hives in cold weather, as the bees will break the cluster, owing to the disturbance, and never get back; at the same time the snow will keep them warm and they will always settle away from the inside of the hive enough to give them air; but should the weather warm up enough to warrant a flight, they should have a bare place shoveled in front of each hive, say 4 to 6 feet square, Cover the snow with straw if possible and look over each colony to see that they can get out.

About the last of March or the first week in April each colony should be examined, removing chaff cushions, and if honey is in sight, and it is fair to strong in bees, place a honey-board on and then the cushion, as now is the time of year when they must be kept warm so that they may rear brood,

American Bee Journal



View Showing Detail Construction of the France Winter-Case.

and lots of it. Here is where the chaff hive pays for itself and extra work.

If a weak colony is found, go to an extra strong one, take a small frame of brood ready to hatch, and help the small colony. I find this pays if it is done right. The next time we go through, we help again if they should need it, and all fair to strong colonies should have brood spread to bring them up; the spreading frames to contain uncapped honey.

Before the colonies get any stronger, the clipping of queens should be done. I am a firm believer in clipped queens, at least when one has tall timber around the yard. All colonies are held back from swarming until honey is coming in. To do this all colonies that are strong enough should have an extra upper story in which to rear brood, but queens should be put down or taken away when the honey-flow starts in earnest, for, as a rule, our honey-flow is short, and there is not much of a fall flow. It is far better to take the queens away at the beginning of the crop, as eggs laid then will not hatch in time to make workers until the honey-flow is over.

No colonies are run for extracting without queen-excluding honey-boards, and when all have upper stories on, a frame of brood is put in each one to bait them. In removing queens to stop swarming, I kill all queens that are 2 years old, and make nuclei of all the yearlings that I can use for increase; these, by fall, will make good colonies.

The extracting is done as the honey comes in, and not left until the flow stops, as a little early fall honey may spoil your white honey in color. I extract it as soon as the honey is ripe, and do not figure on ripening it in a tank, as out-yards are not handy in that way. Honey should be ¼ to ½ capped before it is considered ripe enough. The 1 and 5 gallon cans are the best in my market; 10-pound pails are good. All cans are filled while extracting, and marked with date and grade.

The dark or fall honey is not extracted, as you may need some for winter stores, for colonies run for extracting are, as a rule, empty in the brood-chamber, and what dark honey is left is held over in the frames for feeding the following spring. Dark honey seldom granulates, and makes better food when the bees can fly than the white. Also feeding frames of honey is quickest and best on account of robbing.

A few words as to nuclei. I build them with the queens that I remove at the start of the honey-flow. Should any need help I give them some brood, as I have plenty to spare when the honey-flow is about over. I rear all my queens from cells started under the swarming impulse, or from a frame of fresh eggs, and keep no small or deformed cells. A small, inferior queen may cause the loss of the colony, for she dies, as a rule, the following spring, just when she is needed the most.

As to race of bees, the more Italians the better, but Carniolans are the best to make a strong colony in the spring, when you need bees the most. They are very good honey-gatherers, being large in size and gentle to handle.

Wisconsin.

Rules for Winter Protection

BY FRANK F. FRANCE.

Not long ago in a Farmers' Institute the question was asked, "How many of you cow owners are dairymen?" and I have thought many times that this question would apply to us bee-keepers. How many bee-owners are bee-keepers?

Taking the United States as a whole, how many people who keep bees out of every hundred understand the practical points needed to make a success? The answer, I am afraid, would not be a large figure.

Since the heavy loss of bees the past winter and spring, the wide-awake bee-keeper will study the exact cause of the loss and try to make it right for another such winter.

The future is a blackboard. You have the chalk.

Here are a few points by which we go here in the North: First, the colony must be strong in bees; second, it must have a good, young queen; third, it must have a full supply of honey; fourth, it must have winter protection if in a single-walled hive.

The best outside winter-case for single-walled hives I have seen yet is shown in the view of our home-yard of some 150 colonies in winter-cases fixed for winter and early spring. A 2-inch space is left on the sides and ends, and a foot space above the hive inside of the case walls. On top of the hive is placed a small cap of thin lumber, over this a piece of burlap, and then the walls and the top of the hive are packed with oats or clover chaff. The sides, ends and cover are separate pieces, so they can be removed and easily put out of the way for summer. Outside of the double-walled hive, this, I believe, to be one of the best outside cases.

In wintering bees in the cellar, the temperature must be kept at about 42 degrees, with plenty of fresh air. The entrances must be cleaned often of dead bees. We put the bees in the cellar about Nov. 25, and take them out, if the weather permits, the first week in April. About April 10, the soft maples begin to bloom, and the bees go wild after the maple pollen and sweets. This is a stimulant, and a great help to brood-rearing.

Let me mention the few rules again for successful wintering: All colonies must be strong with bees; they must have a young, vigorous queen; they must have a full supply of honey or honey syrup, and this must be strictly

Home Yard of N. E. France & Son, Showing 150 Colonies of Bees in Winter-Cases pure and without honey-dew; they must have good, dry, winter protection.

These rules hold good for such a winter as the last. We did not lose very heavily.

Platteville, Wis.

Number of Eggs Laid by a Queen

BY DR. C. C. MILLER.

Schweizerische Bienenzeitung contains a very interesting article, page 257, written by Dr. Bruennich. He quotes Doolittle, without at all questioning his authority, giving 5000 eggs laid in a day by a queen whose colony however did not store so much honey as other colonies with queens less prolific. Dr. Bruennich thinks, however, that in America, where heavy yields are obtained, there must be a heavier drain on the strength of a colony, and so a greater amount of brood reared. Of course, he says, with this greater demand on the queen her life must be shortened, and so it is credible that in America a queen is no longer profitable in her third year, while in Switzerland she still performs in a satisfactory manner her maternal duties in her fourth year. (Dr. Bruennich, although they may be exceptional, there are not lacking queens here still doing good work in the fourth year.)

Last year he took numerous measurements of different colonies. He obtained the contents of each comb by multiplying together the two diameters of the ellipse of brood and then multiplying that product by .8. In his best colony brood-rearing began about Feb. 10. (This was no doubt outdoors, where brood-rearing begins earlier than in the cellar.) The amount of brood, small at first, remained moderate throughout March, ascended with great rapidity throughout April, and held its maxium throughout May. Then a rapid decline throughout June to less than half the maximum, continuing to decline less rapidly throughout July, increasing slightly to the middle of August, then declining rapidly from the beginning to the middle of September, when it ceased entirely. But the bees were fed in August, without which Dr. Bruennich supposes the decline would have been constant.

No doubt weather and pasturage had much to do in the case, and different years would give different results. The thing that will seem surprising to most readers is that at the height of her laying this best queen did not exceed 1600 eggs per day, although the colony was strong and stored a good surplus. The laying for the entire season is estimated at 160,000 eggs, and a half million for a lifetime.

May 21, when the brood was at its maximum, it occupied 79 square decimeters, or 1225 square inches. March 11 it was 14 percent as much; March 28, 29 percent; April 12, 32 percent; April 24, 60 percent.

THE CURVED LINE OF LAYING.

In connection with this article Dr. Bruennich presents to the eye a striking picture of the varying of the queens' laying by means of a curved line, which is here reproduced, and which needs no explanation. Along with it he gives the curves of the laying of two other queens. While there is considerable difference, the general outline of the three is much the same. This figure presents material for interesting study. The probability is that 9 out of 10, if not a larger proportion, have thought of the laying of the queen as much more nearly a straight line throughout the season, with an ascent at the beginning and a descent at the end. The most striking difference in the laying of the three queens is that while No. 13, the best queen, kept the brood up to its maximum the whole of May, Nos 6 and 19 show a sharp decline in that month. Is it characteristic in general of the better queens that they will thus keep up their laying while others decline?

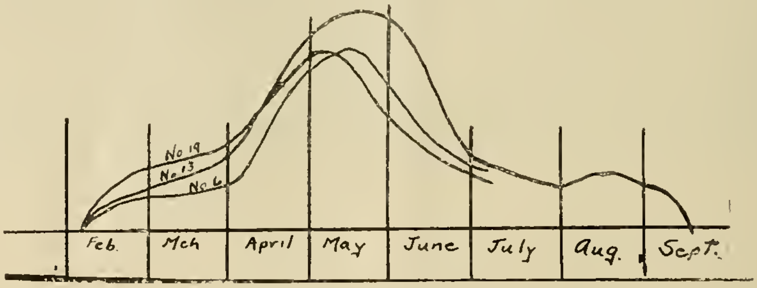


Diagram Showing Curved Line of Laying.

In this case there was evidently an early harvest with no fall flow. The feeding made a slight elevation in August. In case of an important fall flow, might not that elevation have been much greater and longer continued? The curve shown for No. 13 is no doubt the best for an early flow. If the brood-area had been kept up in June, it would only have meant an unnecessary number of consumers later on when there was no work to be done. Yet what about young bees for winter if the drop came too soon?

The probability is that when bees are left to their own devices the great majority of supersedures occur at or near the close of the harvest. Occasionally, however, a queen is superseded early in the season. In such a case the beekeeper may pat himself on the back with the thought that he need have no further concern about that colony for the rest of the season except to harvest the crop, since with that young queen reared in the hive there will be no thought of swarming before the next year. But if he is observant he will notice that he will also have very little trouble with harvesting the crop of that colony. It will be satisfied with a single super, if it even deigns to notice that, while other colonies will need several supers. The beginner will feel puzzled at this, for with a young and vigorous queen he will be likely to expect extra results. A study of that curved line will help to clear up the matter for him. If the life of a worker in the busy season be 6 weeks, even if there be no diminution of the brood-area until the first of June, there will be no diminution of the field force until the middle of July. In other words, to harvest the early flow, say the white-clover crop, we are dependent upon the eggs laid in May, with perhaps some help from the last of April and the first of June. Bees reared in the first part of April will not live to see the harvest, yet they are of exceeding importance, for they are needed to care for the immense area of brood in May.

Now consider the cause of supersedure early in the season. That supersedure occurs because of a failing queen. If it occurs the last of May, the restricted laying throughout that month means a feeble force for the harvest. No matter how vigorous the new queen, her work comes too late to count on a white-clover harvest. "But," says the beginner, "I had one queen superseded the first of May, so that the new queen was in plenty time to provide for the crop, yet that colony yielded almost nothing. Another queen was superseded early in April, and yielded still less. Surely, that was early enough, was it not?" In the first case the new queen may have done excellent work, but no amount of laying will be effective if there is not a sufficient force of nurse-bees to care for the brood. and the laying of the old queen had been so poor that the nurses were too few to allow the new queen to do much in May. In the second case the new queen was early enough, but for some reason queens reared so early are not worth their salt nine times out of ten. Fortunately it does not often happen that queens are superseded thus early.

MEASUREMENTS OF BROOD.

Desiring to know how conditions in my apiary would compare, I took some measurements July 30. I followed his plan of measuring, and multiplied the length of the area of brood in each comb by its depth, and then multiplied that product by .8. In No. 10, a colony of very yellow bees but very poor storers, I found 1235 square inches of brood surface. In No. 13, a hybrid colony and one of the very best storers in the yard, there were 1373 square inches. I do not know how that compares with the amount of brood present in May, but I doubt if there was much more in May.

The remarkable thing in the case is the difference between Dr. Bruennich's measurements and mine. In Dr. Bruennich's best colony there were 1225 square inches of brood in May, and about 235 square inches July 30. It will be seen that my best colony had, July 30, nearly 6 times as much brood as Dr. Bruennich's on the same date, and 12 percent more than his colony when at its maximum in May.

It may be remarked in passing that 13 does not prove to be an unlucky number with Dr. Bruennich or me. No. 13 is his best colony, and my 13 one of the very best.

It should be mentioned that this year the season is exceptionally late, the latest I think I have ever known, and other years I might not find so much brood present July 30. As Dr. Bruennich says, and as every observant bee-keeper has found, the amount of storing done by a colony is not always in proportion to its strength or the amount of its brood. It will be noted that in my apiary No. 13 had only 11 percent more brood than No. 10, while No. 13 had 5 supers and No. 10 only 2, and I think No. 13 was more nearly crowded for surplus room than No. 10.

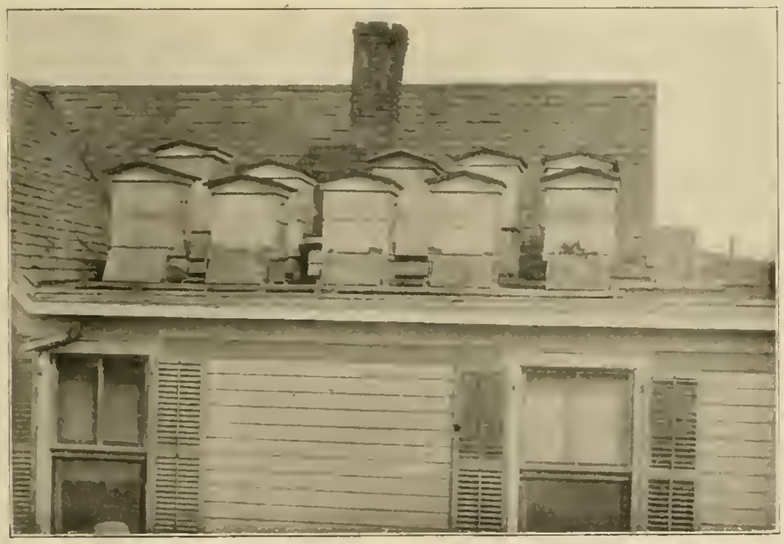
If nothing else is to be learned from these observations and comparisons, there is at least confirmation of the old saying, that bees do nothing invariably.

Marengo, Ill.

Bees in the City—Roof Apiary

BY AUGUST THOMMEN.

Some 5 or 6 years ago I read a book entitled, "Three Acres and Liberty," written by Bolton Hall, wherein it said, among other things, "Many people make a living by keeping bees, and if you have not a place for them in your backyard, put them on the roof." In the same book I also found the addresses of several bee-papers. I sent for a sample copy of the American Bee Journal, and I think I hit the right thing that time, for I would not be without it as long as I keep bees.



Roof Apiary of Mr. Thommen.

The next spring found me with 6 colonies of bees on the back part of my roof. The colonies were all hived in very old Quinby hives, which I soon discarded for the regular Langstroth. It was not very much fun to transfer the bees, but I learned a whole lot by it. From then on I had my ups and downs with the bees. I had a swarm the first year, and lost some of my colonies through mismanagement, but every year I learned a little more about bees. Now I have 10 colonies, about all I can keep upon my roof.

The hives you see in the picture are double boarded, and made to hold 12 frames. So far, I have had very little trouble with swarms. As far as I know I have had only two, one the first year, and one early this spring. The hives are never taken down, but stay up there through the coldest winter. I never yet had any loss from the cold. The entrances of the front row face southeast, while the back row faces the roof. I notice that the back row always is much stronger in bees, and yields more honey than the front row.

This year, for the first time, the bee-inspector came to inspect the bees and see about foul brood. To my surprise there is foul brood in almost every bee-yard in my neighborhood, with the exception of two or three, but I am glad to say that the inspector found mine all right.

This spring I had trouble with my young queens, some of them did not mate until after 4 or 5 weeks, and one proved to be a drone layer.

That essay written by A. C. Allen, in the August number, "How to Secure a Good Crop of Honey," is just the thing. Accidentally I did about the same thing early this spring, only in a little different way, and the result was fine. I never had stronger colonies than this year, and never more honey.

Paterson, N. J.

Habits and Value of Bees

Delivered at Kansas State Agricultural College

BY DR. G. BOHRER.

Some 34 years ago I delivered a lecture on the habits and management of honey-bees before the students of this college, at the request of Prof. John Anderson, then in charge of this institution. He informed me that it was the intention to teach bee-keeping at the college along with other industries and give open-air or field demontrations, and thus place this pursuit on common ground with all other industries of merit. Bees were purchased, and, I am informed, have been kept on the college grounds ever since. But soon after the date of my lecture here, Mr. Anderson was elected to a seat in our National Congress, and practical bee-keeping has been omitted. I hope, however, that at no distant period it will receive its just and full share of attention among the industrial pursuits.

Not that it is meant that all the students of this college (some 1900 in number) are at all likely to become practical bee-keepers, for it is almost absolutely certain that they will not, nor are they likely to become sheep-raisers, swine breeders, or variety farmers, but it is very desirable indeed that all should possess a fair amount of knowledge of each industry engaged in by our people in every section of our great country. When thus equipped all will understand the needs of every other pursuit, and when legislative support is needed, the different State legislatures will be competent to give our needs intelligent consideration and action. Short of this they will not be able to do any pursuit justice except at great labor and expense of those who seek aid, and who must spend both time and money in giving the information wanted by our legislative assemblies.

I will also say that not all persons are physically adapted to bee-keeping, for occasionally a person is found who is susceptible to the influence of bee-sting poison, so much so that their lives are in danger when stung by honey-bees. I knew of a case in which a single bee-sting produced death within 15 minutes. But such occurrences will probably not average one in a hundred thousand, so that, as a rule, there is more alarm when a person is stung by these insects, than has a real foundation in actual danger. I have seen the time when one bee could have chased me over an entire school district. In fact, I remember that a full battery of Confederate cannon were firing at us in Texas, during the Civil War, and I felt much less alarm than I have felt by a single honey-bee.

In time I was given a practical lesson in the matter of being stung.

In Kansas the acreage of alfalfa is rapidly increasing, as well as fruit-bloom and other honey-producing flowers. Alfalfa is one of the greatest honey-yielding plants in all the Great West, and in one instance a bee keeper informed me that he had taken 350 pounds of extracted honey from one 10-frame 2-story hive, all of which had been gathered by one colony of bees.

In view of the foregoing facts let our educational institutions give our young men and women a fair share of knowledge in this branch of industry along with others, and thereby rid it of that midnight darkness which has hitherto kept it in the back-ground.

In the matter of handling bees, as we sometimes see them handled on Fair grounds in cages, without the operator getting stung, it is necessary only to alarm the bees by blowing smoke freely into the entrance of the hive, as the bees will at once begin to fill themselves with honey from their stores; at the same time light drumming on the hive will add to their alarm. In 10 minutes they will have loaded themselves with honey, and when in this condition they never act on the offensive, but are in the passive state, acting on the defensive only, and can be handled without danger of being stung, except as they are pinched or hurt, when they will defend themselves.

Those who handle bees on Fair grounds should explain how they subdue them in preparing them to be handled; without this explanation such exhibitions are not in any way instructive, but rather a deception, as the bystanders are left with the impression that the operator possesses a hypnotic or mesmeric influence over bees, which they think but very few persons possess. Such exhibitions are frauds, and should not only be condemned, but should be excluded from all Fairs.

As standard authorities upon the habits and general care of bees, I will recommend the works of the late Rev. L. L. Langstroth, and of Prof. A. J. Cook, of California. There are other works of merit, but none better for the beginner in bee-keeping, and there is no better hive for general use than the Langstroth 10-frame hive.

Lyons, Kan.

Dr. Miller's Answers

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Disposing of Capping Washings

1. Is there any chemical or other article which can be mixed with the washings of wax or cappings to be thrown out that will not attract the bees?

2. How can I dispose of water which is a little sweet so as not to have the bees bother? OHIO.

ANSWERS.—1. Carbolic acid would, no doubt, be effective.

2. I have never paid any attention to it, for if it is thrown into a drain or upon the ground it is so diluted that it disappears before the bees pay any attention to it. If you find the bees trouble in that way, you could add more water to it before throwing it away, so as to make the sweetness very slight, and then if each time you throw it on a new new place on the ground, I think you will have no trouble. The reason for extreme caution in the matter is the fear that there might be foul brood in the honey. You might make a sure thing of it by having a pit dug, into which you would throw the washings, and have the pit covered well.

How to Keep Moth Out

How can I clear a colony of bees of moth and then keep them out? CALIFORNIA.

ANSWER.—Prevention is better than cure. The best preventive is a big lot of bees in the hive. Italians are better than blacks to keep moth at bay, and if your bees are very much inclined to black, you will do well to introduce Italian blood. Even a weak colony of Italians will keep down the moth, A queenless colony is likely to be troubled by the moth. With strong colonies of Italians and no queenless colonies you can whistle at the moth. But if you have a colony where the "worms," as the larvæ of the moth are called, are pretty bad, you may do a little to help. You will see the gallery of the miscreant running along the surface of the comb. Take a pin or a wire nail and prick into one end of the gallery. Then prick into the other end and tear open the gallery, and thus drive the worm toward the other end. where he will come out, and you can dispatch him. Don't allow pieces of comb, or combs in hives without bees to be lying aroung as breeding places for the moth.

Handling Caucasian Bees

I desire to make enquiry to the best method of handling Caucasian bees in New York State. I have read in the American Bee Journal that they will fill up as much as 10 frames in a hive-body with brood. In this case, how would you manage this in the spring? In the fall would you advise wintering them in one or two stories?

NEW YORK.

ANSWER.—The probability is that you will find that Caucasians need no treatment different from other bees. You will find bees other than Caucasians that will keep 10 frames filled with brood, and you are not likely to find that all Caucasians will do it. A colony that will keep more than one story filled with brood early in the season, whether Caucasian or any other, should have a second story given, unless you want to draw brood from it to give to weaker colonies. Then when harvest time comes it should be reduced to one story, any surplus frames of brood to be distributed where they will do the most good.

In the fall you will likely find that of their own accord they will reduce the brood-nest so that one story will satisfy them.

Supersedure of Queens—Miscellaneous Questions

1. What causes supersedure when everything apparently looks in good condition. Sept. 2 I had a swarm go out, and upon examination of the hive I found that they had superseded their queen (which was of this year's stock), and there were also four other virgins in the hive. I knew it was too late for a profitable swarm, so I pinched the heads off of all but one queen, destroyed all remaining cells, and then put the swarm back in the same hive. Was this right? Everything is going along smoothly at this date (Sept. 15), and the new queen is laying.

2. One of our neighbor's is complaining that the bees destroy her grapes and sting her peaches. What solution would you give her? If I explain to her that bees do not destroy sound fruit, etc., no doubt I will not be believed, because I am the owner of the bees. Would you refer her to the State Entomologist?

3. I am purchasing 300 pounds of extracted honey to be put up in one-pound glass jars and 5-pound pails. Should the pails, jars and honey be heated the same as if the product came from my own extractor? The idea is to keep it from candying.

4. In requeening an apiary would you advise introducing the new queen (that is caging her in the hive to be requeened) immediately after killing the old one, or would you kill the old queen and then wait 3 or 4 days to allow the bees time to start queen-cells, then go over the frames and cut out the cells? If a cage containing the new queen is put into the hive immediately after killing the old queen, isn't there danger of the bees building queen-cells, and then when they release the new queen ball her and continue with their cells?

5. What time of year is best to requeen?

NEW JERSEY.

ANSWERS.—1. You ask what causes supersedure when everything apparently looks all right. That "apparently" is probably the answer. A queen may be in some way at fault, whether a few days or a few years old, and you may see nothing wrong, but some way the bees know about it. It is not entirely clear, however, from what you say, whether this was not a case of regular swarming rather than supersedure. In any case you did well to do as you did.

2. Yes, she would no doubt be more ready to believe an entomologist than an interested bee-keeper.

3. Of course, the treatment will be all the same whether your bees or the bees of others produce the honey. But heating the honey will keep it from candying only temporarily, unless the honey be sealed, and sealing is not commonly practiced. You will do well to inform your customers how to liquefy the honey when it candies, and it is well to have labels that give that information. Very rich, well ripened honey gives less trouble about candying than that which is taken too soon from the hives.

4. Opinions differ. Some think it better to get the new queen in immediately upon the removal of the old one. Others think it better to let the bees continue queenless for some time. My own experience has been that it is desirable to have the new queen for some time caged in the care of the bees before she is freed. Perhaps it is because this allows the new queen to acquire the hive-odor. In Europe it is more or less the practice to cage the old queen in the hive for a day or so before removing her, and then to put the new queen in the *same* cage. Some prefer to cage the new queen in the hive 2 or 3 days before removing the old one, then allowing the bees to get at the candy to release the new queen.

5. That depends. If you ask the question now, I would answer that the present is an excellent time. But if you should ask me next spring I would not advise you to wait until fall. If your object is to introduce a queen of new stock, so as to improve your stock—and that is quite generally the object—you will gain by introducing her this fall; for in the spring she will be established in her colony, ready for you to breed from her as soon as conditions will allow. If you are introducing a queen of your own rearing, merely to replace one of less value, there is no better time than toward the close of the honey-flow. That is the time when most of the superseding is done by the bees, and interferes with storing less than at other times.

Keeping Nuclei Always on Hand for Replacing Poor Queens

I have noticed Doolittle saying that one ought to have nuclei growing most all the time in order to supply queens, or better queens whenever necessary. It seems awkward to have so many hives as lots of nuclei would require; they might grow to full colonies. Seemingly a person would require many special colonies for nuclei. Do bee-keepers, while using Hoffman frames, have three and five-frame hives for nuclei? What I want to do is to see the way clearer for the most expeditious supply of queens to inferior colonies, as could be practiced by always having a few nuclei on hand. I tried to rear queens as per issue of August, 1912. I put frames with 4 V-pieces of foundation into 10 fine colonies, but in 4 days they had these frames so filled that I could scarcely tell them from the rest.

PENNSYLVANIA.

ANSWER.—Doolittle is quite right that we should have on hand queens to replace those that are not up to the average; and the only way we can do that is to have them in nuclei. That does require, as you say, a good many hives and stands. But you cannot have anything of much value as a rule, without its costing you something. They will, as you say, grow into full colonies; but that is quite commonly what we want. It is easy to keep down their strength. If you have half a dozen nuclei that are stronger than you want, all you need do is to build one of them up into a full colony by taking bees and brood from the others.

One way to avoid having so many nuclei—or rather to have nuclei in so many hives—is to have more than one nucleus in a hive. At one time I practiced quite successfully having 6 nuclei in one 10-frame hive. Each nucleus had only one comb, and as the partitions were only about five-sixteenths thick that allowed a pretty wide space for each comb. When a nucleus became pretty strong it would build comb at the sides, which I would have to cut out. But this is better than to have a narrower space, for bees did not swarm out of these nuclei, and when I afterward gave a narrower space for the combs they swarmed out quite too often. The entrances to the 6 compartments were arranged so that there was little danger of a queen entering the wrong entrance. The entrances of No. 1 and No. 6 were toward the back end of the hive *at the top*, just a hole ½ or ¾ inch. For No 2 and No. 5 a hole was made in the bottom and a passage channeled out to emerge at the side of the hive, at the bottom, near the front end. No. 3 had an opening at the usual place for the entrance in front. No 4 has its entrance at the back.

After I changed to 8-frame hives, I used 3 nuclei in a hive, a 1-frame nucleus in the center with an entrance at the back, and at each side a nucleus of 2 frames, sometimes 3, with entrances in front, at each end. But of late I have mostly used a full hive for each nucleus, generally having 3 frames in a hive, although sometimes 2, and sometimes 4 or more. That made it easier to build up each one into a full colony than to have more than one nucleus in a hive.

I think bee-keepers generally use their regular hives for nuclei, except those who make a business of rearing queens to sell.

You will find it easier to get your combs built out in good shape for cells if you have them built in nuclei rather than strong colonies. Still, you can get just as good cells with combs built as yours were.

The Foul-Brood Law

Is it a fact that one of the greatest aims of the present foul-brood law is to get rid of the farmer bee keeper and have bee-keeping go into the hands of specialists and raise the price of honey? ILLINOIS.

ANSWER.—I think I am quite familiar with all the arguments that have been used in favor of securing foul-brood laws, both in this country and other countries, and in no single instance have I ever heard it suggested that a foul brood law would get rid of the farmer bee-keeper. I have heard it suggested that supply dealers wanted a foul-brood law so that hives of diseased colonies would be destroyed and new hives might be bought. I need not tell you what a foolish idea that is. It certainly cannot keep company with the idea that foul-brood laws drive farmers out of bee-keeping; for if they have that effect it would simply be destroying just so many customers for hives.

The aim of the foul-brood law is to restrict and to overcome as much as possible the ravages of foul brood. How would it drive a farmer, or any one else, out of the business? Suppose a careless bee-keeper with a few colonies has foul brood. If he lets the disease alone, as he is likely to do, it's a dead-sure thing that it will not be a very long time until his bees will be wiped out. Now suppose a foul-brood inspector comes along and obliges him to clean up the disease. Isn't that the only thing likely to make him continue in the business? Here's the way it looks to me: The foul-brood *disease*, left to itself, is sure to drive the careless bee-keeper out of the business; the foul-brood law is the only thing to keep him in business.

Rearing Queens—Who is Inspector?

Next spring I intend to rear a few queens for sale, but I saw an article in the Bee Journal stating that any queen-breeder must have a certificate from a bee-inspector. I have kept bees here for quite a number of years, and a bee-inspector has never called and inspected my apiary. I do not know whether there is any inspector in Oregon. Where could I find out about such bee-inspector, and is this inspector paid by the State or is the apiarist to pay such cost? OREGON

ANSWER.—My impression is that there is no inspector in Oregon, but I may be mistaken. It certainly is awkward to require inspection if there is no inspector. Generally an inspector is paid out of public funds. If you are a member of the National, the Secretary or General Manager can probably give you more positive information than I can.

Larger Hives for Carniolans

I have some Carniolan bees in 8-frame hives. If I had them in a larger hive would they swarm less? Can I get surplus honey in a bigger hive; that is, if I have a bigger brood-chamber? I like the Carniolan bees; they stand the severest winter and breed up faster in the spring. They gave me a nice surplus of honey early in the season, two supers to each colony. With all the swarming I had, and with 8-frame hives, I sold the honey as No. 1, and got a good price for it. I have some colonies that will give 4 supers, and this is not the best honey year for Illinois, either. ILLINOIS.

ANSWER.—Yes, a large hive will reduce the probability of swarming, since a crowded condition of the brood-nest is one of the chief factors in producing the swarming fever. Neither will a larger hive take away your chances for getting surplus. Formerly I used 10-frame hives, and changed to 8-frame hives chiefly because it was the fashion. If I were to start in afresh I would study some time before I would decide to adopt the smaller hive. With the larger hive I got fine crops of beautiful sections, and you can do the same.

Honey from Cappings as Feed Dark and Ligh Cappings

1. Is the honey left in the cappings good feed for the bees after it is heated in the solar wax-extractor? Will it cause dysentery?

2. Why is an old, dark comb always sealed dark when the one at the side, if new or light, will be sealed light?

I think a great deal of your columns in the American Bee Journal. IOWA.

ANSWERS.—1. Yes, unless heated so as to be actually burned—a thing not likely to happen—it ought to be wholesome food for them.

2. You will find that not only is the dark comb sealed dark, but the light comb beside it is likely to have its sealing darkened to some extent. Years ago I used wide frames for sections, the wide frames holding 8 sections, so that they were the same size as brood frames. As a bait to induce the bees to begin work promptly in the super, I practiced taking a frame of brood from the brood-chamber and putting it in the super, a frame of sections facing it on each side. It was effective in starting work promptly in the sections, but if at any time I left it until the bees began to seal the sections they were sure to seal them dark. The explanation is that the bees are in the habit of carrying bits from the old combs to help in the sealing. That explains why it is best to have sections at some little distance above the top-bars. You will find that sections built over top-bars ⅜ inch thick will be darker than if built over top-bars ⅞ thick.

INTERIOR VIEW OF JAPANESE BEE-MEETING—(See front page.)

Allen's System of Swarm Prevention

Will you please explain Mr. Allen's system of swarm prevention, as he says in the August number of the American Bee Journal for 1912, that he gave it to the readers of the Bee Journal two years ago. If it really has any merit, will you kindly reproduce it in the journal. CANADA.

ANSWER.—If you will turn to page 94 of the American Bee Journal for 1910, you will find the plan as given by A. C. Allen, which is as follows:

"When the honey-flow is well started I go to each strong colony, regardless of whether the bees desire to swarm or not, and remove it from its stand, putting in its place a hive filled with empty combs, less one of the center ones. Next, a comb containing a patch of unsealed brood about as large as the hand, is selected from the colony, and placed in the vacant place in the new hive; a queen-excluder is put on this lower story, and above this a super of empty combs, this one having an escape hole for drones; and, on top of all, an empty super. A cloth is then nicely placed in front of this new hive, on which the bees and queen are shaken from the combs of the parent hive, and the third story is filled with the combs of sealed brood and brood too old to produce queens, and allowed to remain there and hatch, returning to the working force."

This is really the Demaree plan, which was given to the public many years ago, by G. W. Demaree, a prominent Kentucky bee-keeper at that time. Mr. Allen has varied it by putting a frame with some brood in the lower story, whereas I think Mr. Demaree had only empty combs or combs with starters in the lower story. Mr. Allen's variation is of value, for I think there were cases reported in which the bees swarmed out with no brood in the lower story. Mr. Demaree put all the brood in the second story, while Mr. Allen puts it in the third. I don't know which is better.

Mr. Allen says "the third story is filled with the combs of sealed brood and brood too old to produce queens." I hardly understand that, for he says nothing about putting brood elsewhere, and generally most of the combs would have at least some very young brood.

The plan is a good one for extracted honey, but not available for comb.

"Slaughter of the Innocents"

Why do some of my colonies throw out a lot of young bees in all stages of development, some dead and some alive? Yesterday I could have picked up a handful in front of a hive belonging to a neighbor. Why should they "slaughter the innocents?" The writer has much more enthusiasm than experience in bee-culture, but finds it very interesting; your department of the American Bee Journal especially so. IOWA.

ANSWER.—"The slaughter of the innocents" no doubt occurred because the innocents were "no account" innocents; that is, they were drones. When the harvest is over, or when there comes a serious break in the harvest, the bees seem to conclude that they can hardly afford to support a lot of gentry who do nothing to earn their own livelihood, so the poor drones have to go. It is common to say that at such times the workers kill the drones, stinging them to death. I think such an opinion is the result of superficial observation. I never saw a worker sting a drone. It is possible that such a thing may happen, but I think it must be a very rare occurrence. Many, many times I have seen workers driving drones, seeming to be biting them and trying to sting them; but it appeared rather that they were pretending to sting. When one worker stings another you do not need to watch very long before you see the stung worker curl up and die. I never saw a drone have this appearance after a worker had pretended to sting it. If I am rightly informed the workers, aside from teasing and driving the drones, merely withhold food from them, and they die. For a drone cannot, like the workers, live by helping itself to the stores in the cells, but must be fed partly digested food by the workers

It is possible that you may say that there was no failure of the harvest. Well, sometimes it happens that individual colonies do not wait for the general slaughter, as it is called. After a colony has swarmed, the old queen having gone off with the swarm, the young queen in the mother colony becomes fertilized ready for laying. After this there is no further need of drones for the current season, and they meet their fate.

Whether the driving out of the drones occurs at one time or another, not only does the colony become rid of the flying drones, but all drone-brood is destroyed by the workers.

You will do well to prevent the rearing of these drones in all but a very few of your best colonies. Even one colony in a hundred will rear enough drones to do for the whole apiary. If there is no drone-comb in a hive, there will be no drones. You can cut out any drone comb and put in its place patches of worker-comb or of worker foundation. Some, however, think it is well to satisfy the bees to the extent of leaving them one or two square inches of drone-comb. You can behead these drones in the comb after they are sealed over, or sprinkle a little salt on them before they are sealed.

REPORTS AND EXPERIENCES

The Value of a Bee Journal

When I took up bee-keeping I read every thing I could find on the subject with the hope of finding some system of management that would suit me and my environments. Needless to say I did not find it, but by picking up an idea here and yonder from the experience of others as given in the bee-papers and from observations of my own, I was able to evolve a system of my own that suited me. Then, a few years later, I moved about a thousand miles, and the first season showed me that my system was not good in my new location. I was up against the question of how to prevent swarming, make a reasonable amount of increase, and get a crop of honey while operating out-yards. I had to either solve that question or quit

I read everything on the subject that I could find, and finally by combining the systems of two prominent writers, with some ideas I had gained by experience, I evolved a new system of my own that I am still following. It has been worth more to me than the subscription price of all the bee-papers published in America will amount to as long as I live. That is just one instance I am constantly picking up new ideas that I consider worth all the papers cost me.

And if I knew all there is to be known about bee-keeping, I should still want the papers in order to keep in touch with other bee-keepers and see how they are getting along, their prospects, successes and failures, hopes, etc I should want to know about markets, about legislation, favorable or unfavorable to bee-keeping, and about diseases of bees and the manner of treatment for them and all the news of the apicultural world.

When a man says he has no time to read bee-papers, it simply means that he has lost all interest in bee keeping. It does not necessarily mean that he has found the pursuit unprofitable, but that he has become interested in something else. I do not have time to read agricultural papers or medical journals, and yet I know farmers and doctors who are making more money than I am. I do not read those papers for the reason that I am not directly interested in those pursuits When a subscriber tells you he has no time to read bee-papers, you might just as well tell him "So long. I wish you success in your new vocation." It never was intended that we should all be bee-keepers or all farmers, or all doctors, and a man is liable to change his vocation and acquire new interests to the exclusion of old ones. H. D. Murry.

Mathis, Tex.

Not All Illinois Reports this Good

Bees are doing fine. I have one colony that was treated for foul foul brood the first of June. It has filled 9 supers of 24 sections each. Frank Hinderer.

Frederick, Ill., Sept. 9.

Another Bad Report from California

Our honey crop is again a total failure in this locality. The condition this year has been the same as two years ago My 80 colonies of bees made about 500 pounds of comb honey. Some bee-keepers south of here lost half of their bees by starvation One traveling salesman and farm produce buyer, who has traveled through the central coast country, told me that there was practically no honey in the country, and that the bees were dying at an alarming rate, generally from starvation. B. Schnuckel.

Lone Oak, Calif., Aug. 30.

Seeking a Bee-Location

I made tracks in the snow last winter seeking a bee-location. I went towards the South. It was 40 degrees below zero at Great Falls, Mont., 27 at Edgemont, S. D, 17 at Liberty, Nebr, 7 at Anderson, Mo, and 3 below at Sarcy, Ark As I stayed there a week, I made tracks in the mud after that. But I did not remain in the South, as I found too many bees for the pasture in the localities visited. In June I returned to this place. As I traveled by day only, I noticed the change in bloom from one place to another, and the great variety of flowers.

I believe that, from Ogden north to this place is the best bee-country But in many spots too many bees are kept.

Looking for a country where milk and honey flow, you will say Sure, and I have found it, too. They flow in the irrigation ditches and make the land sell for $200 per acre, even where the wild sage brush still grows

However, some good bee-man spoke about the land boomers in the American Bee Journal. He told the truth, and the truth has not been half told for much of the western irrigated land is a delusion or a fraud Come and see before you sell out in the East

White clover does well here. As to alfalfa, our seedsman here sold 5 tons of seed in 1912 so far

There will be half a million tons of alfalfa hay put up within 20 miles of Rupert, Idaho Thousands of stacks are in sight. In field corners along the ditch banks, there is plenty of bloom which cannot be cut down. Then there is alsike clover, sweet clover, and white clover in pastures. Here wild alfalfa, dandelion, rabbit brush and willow is the wild flora There are no trees for stray swarms: another good point Where bees are plenty, honey is found, but where too many bees are, honey becomes scarce So a good bee-country is not always best for bee-men.

I enjoyed and endorse what Mr Byer said about former Editor York But York's wish about Dr Miller, "May he enjoy another twenty years," seems too short It made me feel sad Better send him a handful of flowers now, however, than a basketful when he is gone. L. W. Benson.

Rupert, Idaho, July 25.

A Good Bee-Book

I received a copy of "First Lessons in Bee-Keeping" and I must say it is just the right thing for a beginner or a more advanced bee-keeper What I like about it is if a person wants to find out about something he doesn't have to read 3 or 4 pages before he finds what he wants, as in some of the other books. It has less pages than some of the other books, but says three times as much as another book. Everything is short and sensible, and comes right down to the point; therefore, I think the public will like this book the best. John Pashek.

The Dalles, Oreg.

Poor Crop in the South

There was but little honey produced in this part of the country this year. I believe that it has been the poorest year for bees and honey that I have ever seen in any place. Broom corn, corn and the hay crop were very good The cotton crop is being cut short on account of the extreme drouth that we are having.

I believe that I have taken the American Bee Journal for 35 years or more. There have been many changes since that time. Many pioneers in bee-keeping (among whom was my father) have passed away during that time. Best wishes for the success of the "Old Reliable." W. C. Nutt, *Treas.*

Texas.

Rain in California

California has had quite a surprise, and something *very unusual*. Rain fell here Sept 3, and a good, heavy rain today. In 26 years rain has fallen only nine times in summer prior to Sept 3, and the last time we had rain before the date mentioned was in 1906. The rains will do great damage to the prunes and raisins, but will be of benefit to the bee-keepers

The alfalfa blossoms are now yielding nectar, and the extractors and the bee-men are busy, but not up to expectations. John C. Frohliger.

Berkeley, Calif., Sept. 5.

Prospects in Iowa

Continuous rains here give promise of a flow of honey from hearts-ease for the first time in four years. There seems also to be considerable white clover in bloom, and I have already seen bees on a few blossoms.

Sweet clover was the great stand-by this summer. There was an abundance of it in this vicinity, which yielded well. However, if there is any surplus put up it will be from now on, so far as I know. A. F. Bonney.

Buck Grove, Iowa, Aug.

Dividing Decreases the Amount of Honey Stored

My bees did fairly well this summer, and did not swarm at all but I divided and doubled the number of colonies I had and got *some* surplus honey. P. A. Norman.

Puyallup, Wash., Aug. 23.

Glowing Report from Kentucky

I have colonies that have given me 114 pounds of comb honey this year, and will give me at least 50 pounds more. I have been working with bees 35 years.

Visalia, Ky., Aug 25 G. W. Cheesman.

Fall Flow Good

Bees are booming on fall flowers. Have 600 colonies in about the same condition as last year Good, big prospects. Bees want to swarm. F. B. Cavanagh.

Hebron, Ind., Aug. 24.

Large Crop

There has been a large honey crop here, both early and late honey, and bees are in fine shape E. E. Mott.

Glenwood, Mich.

An Off Year in California

This has been an off year for California. Only 8 tons of honey from 500 colonies. Golden Rule Bee Co.

Perris, Calif., Aug. 20.

Some Fall Honey in Missouri

Bees no good all summer; no clover, but since the rains they may gather some fall honey. H. Mansperger.

Lewistown, Mo., Aug. 10.

GINSENG AND GOLDEN SEAL

Grow those valuable plants. They go well with bee-keeping. Write me for prices on Seeds and Roots.

F. GENT, Rockford, Minn.

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

FOR SALE — Untested Golden Italian Queens 50c each. J. F. Michael, 8A2t Winchester, Ind.

FRONT LINE Italian Queens by return mail at 75c each, 6 for $4 25, 12 for $8 00, 25 and up 60c each. J. B. Hollopeter, Pentz, Pa.

GOLDEN Italian Queens, Nuclei, and Full Colonies. See price-list in May number, page 131. Isaac F. Tillinghast, Factoryville, Pa.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00. Robert Inghram, Sycamore, Pa.

FOR SALE—Three-banded Italian Queens bred for honey, gentleness, and prolificness. One, $1.00; 6 for $5 00. Wm. S Barnett, 7A4t Barnett, Va.

MY SYSTEM — Union bee-hive and Queen. Will increase both your colonies and honey crop, and improve your stock, making bee-keeping a real pleasure. Cash orders $10.00. 3Atf Joe Egner, Box 552, Lavergne, Ill.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10. 7A4t J. B. Brockwell, Barnett, Va.

QUEENS — Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have. Frank M. Keith, 3Atf 83½ Florence St., Worcester, Mass.

QUIRIN'S famous improved Italian queens nuclei, colonies, and bees by the lb., ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. 3Ast Quirin-the-Queen-Breeder, Bellevue, Ohio.

FOR SALE—Italian queens bred from the best honey-gathering strains obtainable. Untested, 75c; Select, $1.00; Tested, $1.25; Select Tested, $1.50; Nuclei without queen, 1-frame, $1.50; 2-frame, $2.00; 3-frame, $2.75. For queens and nuclei in quantity lots, and bees by the pound, write for prices and circular. Robert B. Spicer, Wharton, N. J.

GOLDEN and 3-band Italian Queens (strictly free from disease). Tested Queens, $1.00 each; 3 for $2.75; 6 or more, 85 cts. each. Untested, 75c each; 3 Queens $2.00; from 6 to 50, 55 cts. each. Bees by the pound, $1.00. Nuclei, per frame, $1.25. Safe arrival and satisfaction guaranteed. C. B Bankston, 2Atf Buffalo, Leon Co., Texas.

CARNIOLAN QUEENS—Bred from best imported stock. Many colonies can be manipulated without the use of smoke or veil. Untested, one for 75c; six for $4.25; twelve for $8.00. Tested, one for $1.00; six for $5.00; twelve for $10. William Kernan, Rt. 2, Dushore, Pa.

FOR SALE.—50 colonies of bees in 8 and 10 frame Langstroth hives. If sold, must be shipped in November. Colonies are all strong and hives well filled with winter stores. No disease. Price will be low, as I have more bees than I am able to handle. Write for what you want, and get further partibulars and prices. 10A1t Edwin Bevins, Leon, Iowa.

SUPPLIES.

FOR SALE—A full line of Bee-Keepers' Supplies. Agents' prices. Save freight. Dreamland Farms, Buckingham, Fla.

FOR SALE—Empty second-hand 60-lb. cans 25 cts. per case of two cans. 100 for $22.50. 7A4t E. R. Pahl & Co., Milwaukee, Wis.

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ORDER IDEAL WINTER CASES now, and be ready for the stormy days. Extracted honey taken in exchange. R H Schmidt, Rt. 3, Box 209, Sheboygan, Wis.

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HONEY FOR SALE—Clover honey of the finest quality in new 60-lb. cans at 9 cts. per pound. 8Atf J. P. Moore, Morgan, Ky.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FINE WHITE and light amber alfalfa honey put up in any size of tin packages, any quantity. Dadant & Sons, Hamilton, Illinois.

CHOICEST THICK RIPE CLOVER HONEY in full-weight 60-lb. cans at 11c per pound. Sample mailed for 8c. E. W. Brown, 10Atf Box 17, Willow Springs, Ill.

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American Bee Journal,
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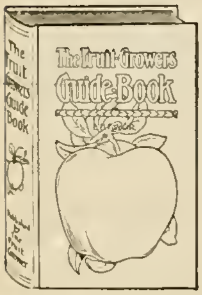
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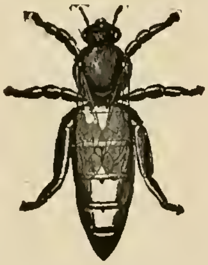

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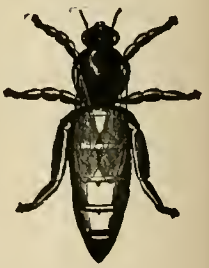

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Insure safe arrival of your comb honey, and better price, by using the best protection cases made. Get our prices of **safety cases,** and regular cases with corrugated pad, top and bottom, and corrugated follower. **Dealers everywhere. Red catalog postpaid.**

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40 years' experience in Queen-Rearing
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Untested, one for 75c; six, $4.00; twelve, $7.50. Tested, double these prices. The very best BREEDER, $10.00; Select Breeder, $5.00.

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They are the Finest in the Land—
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Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

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It also keeps the colony warmer, and allows breeding up in early spring.
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Controls the supply of drones, and insures the best mating of Queens.
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Moore's Strain and Golden Italian Queens, untested, $1.00; six, $5.00; twelve, $9.00. Carniolan, Banat and Caucasian Queens, select, $1.25; six, $6.00; twelve, $10.00. Tested, and kind, $1.50; six, $8.00. Choice breeders, $3.00.

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Remainder of season Golden Tested Queens **90c** each; Untested, **60c** each. Strictly no disease. Safe arrival and perfect satisfaction **guaranteed.**

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Famous Queens!

From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $7.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens—1-frame, $2 50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; $2x 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23 40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drone as well as the Queens.

We guarantee safe arrival and satisfaction.

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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II YOU want them YELLOW try the GENTLE strains of Swarthmore PEDIGREED GOLDEN QUEENS.

Swarthmore, Pa.

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EVERY BEE-KEEPER KNOWS

The Worth of A Good Queen

Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

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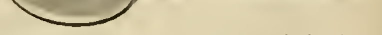
English Honey-Spoon.



This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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HONEY AND BEESWAX

CHICAGO, Sept. 19.—During this month we have had very large sales of comb honey, the receipts having been taken freely, but now the stock is beginning to accumulate and the market is a little easier in tone. In fact, houses that are not in the habit of getting honey have been selling lower than quotations herein given. No 1 to fancy comb honey sells at 17@18c per lb., with the off grades from 1@3c per lb. less. Extracted honey is in free supply, with the white selling at 8@9c per lb., with some small lots of fancy clover and linden bringing 10c per lb. The quality of honey this season is bringing in duplicate orders. Beeswax is steady at from 30@32c per lb., according to color and cleanliness.
R. A. BURNETT & CO.

CINCINNATI, Sept. 18.—The market on comb honey is quiet, and there is not very much demand, this we owe to the hot weather for this time of the year and the large fruit crop. For No. 1 white comb honey in a wholesale way we are getting 15½ cents per pound. There is no demand for off grades of comb honey. The demand for extracted is fair. white selling at 9½c in 60-pound cans, light amber in 60-pound cans is selling at 8c. Beeswax is in fair demand at $33 per 100 pounds'

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

CINCINNATI, Sept. 18.—The demand for both extracted and comb honey is not up to expectations by far for this time of the year. Big buyers refuse to pay the prices we must ask, and we fear that it will be a case of a small business or lower prices, and owing to the high prices we have paid it will be impossible for us to lower our price. We are selling strictly fancy comb honey at 14@16½c a lb., according to the quantity and quality purchased; amber comb honey is not wanted at any price. What little is sold of fancy extracted honey in 60-pound cans we are getting 8@10c a lb., while amber honey in barrels we are selling at 5⅜@7c, according to the grade and quantity purchased. There is plenty of beeswax, and the prices are much easier than they have been for some time. We are paying 28c a lb. delivered here for choice, bright yellow beeswax.
THE FRED W. MUTH CO.

INDIANAPOLIS, Sept. 18.—Extracted honey of finest quality is selling at 10½@12c in 5-gallon cans, according to quantity at one shipment. No. 1 and fancy white comb is selling at 16@17c. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

KANSAS CITY, MO., Sept. 18.—The receipts of both comb and extracted honey are still light. The demand for comb honey is good. We quote: No. 1 white comb, 24 section cases, $3.50; No. 2, $3.25; No. 1 amber, $3.25; No. 2, $3.00. Extracted, white, per lb., 8@8½c; amber per lb., 6@8c. Beeswax, per lb., 25@28c.
C. C. CLEMONS PRODUCE CO.

NEW YORK, Sept. 12.—Comb honey is now arriving right along with a fair demand for all grades at unchanged prices. The season for buckwheat being late this year, there is none on the market yet to speak of. From the reports we are receiving from producers there will be a rather light crop; however, the demand for buckwheat comb honey is being limited, we do not think that higher prices will rule than from 10@12c per lb., according to quality. Extracted is in fair demand for all grades at unchanged prices.
HILDRETH & SEGELKEN.

SAN FRANCISCO, Sept. 18.—The demand for comb honey is still beyond the supply, and fancy and No. 1 still very limited, and what arrives is soon taken up. Extracted honey is somewhat easier, and several carloads have been upon the market, and the water white and lighter grades have found ready buyers. Fancy white comb, 16@17c; dark to amber, 13½@15c per lb.; river comb, 11@12⅓c per lb. Water-white extracted, 8@8½c; light amber, 7½@8c; amber, 6@7½c; lower grades, 5@6½c per lb. Beeswax, 27½@30c for nice. yellow wax, 23@26c for the darker grades.
JOHN C. FROHLIGER.

BOSTON, Sept. 16.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

FOR PURE
CARNIOLIAN ITALIAN and BANAT
Queens
for fall delivery send your orders to me or write for circulars.
PRICE
75c each; $8.00 per dozen.
Grant Anderson, San Benito, Texas

Special Delivery

During this month we shall double our usual efforts in points of delivery and service. Early indications not having been most favorable, it is possible many bee-keepers will not have laid in a sufficient stock of supplies, such as sections and foundation, for the clover and basswood crop this month. We are prepared to make up for this oversight by having a large stock of both sections and foundation on hand for instant delivery. We carry nothing but the Root make, which insures the best quality of everything. We sell at factory prices, thereby insuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to bee-keepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

HONEY AND BEESWAX

If you haven't made arrangements for the disposition of your honey and wax for this season, consult us. We buy both in large quantities, and can assure you of fair and courteous treatment, and a good price for your crop.

Shipping-Cases.

To sell your crop to the best advantage it must be well put up in attractive style. We have shipping-cases that answer every requirement of looks and utility. Small producers who sell their crops locally will be interested in the cartons in which comb honey is put up to sell to the fancy customers at top-notch prices. We have honey-cans, too, in cases for those who produce extracted honey. In fact, there isn't anything we don't have that the bee-keeper needs, either to produce his crop or help to sell it.

C. H. W. WEBER & CO.

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For the best pictures of bees, bee-appliances and bee-scenes sent in before November 1, 1912

First Prize, Cash . .	$25.00
Second . . .	10.00
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Fourth . . .	5.00
Fifth . . .	5.00

6th to 25th each one copy of "Langstroth on the Honey-Bee," or in case you have this we will substitute any other standard work on bees

Restrictions:—All pictures to be clear and of good print, and accompanied by at least a short description. We reserve the right to use any and all pictures sent in. No picture will be accepted which has already been used in publication.

Any size picture will do. Send in your pictures now, or take them now and send them in before the date mentioned above.

For every picture we use, even if it does NOT come in the prizes, we will give a premium of some sort

It is our aim to increase the value the American Bee Journal, and we must have good pictures and plenty of them. Remember, our magazine is a National bee-paper

THE AMERICAN BEE JOURNAL

Hamilton, Hancock Co., Illinois

AMERICAN BEE JOURNAL

NOVEMBER 1912

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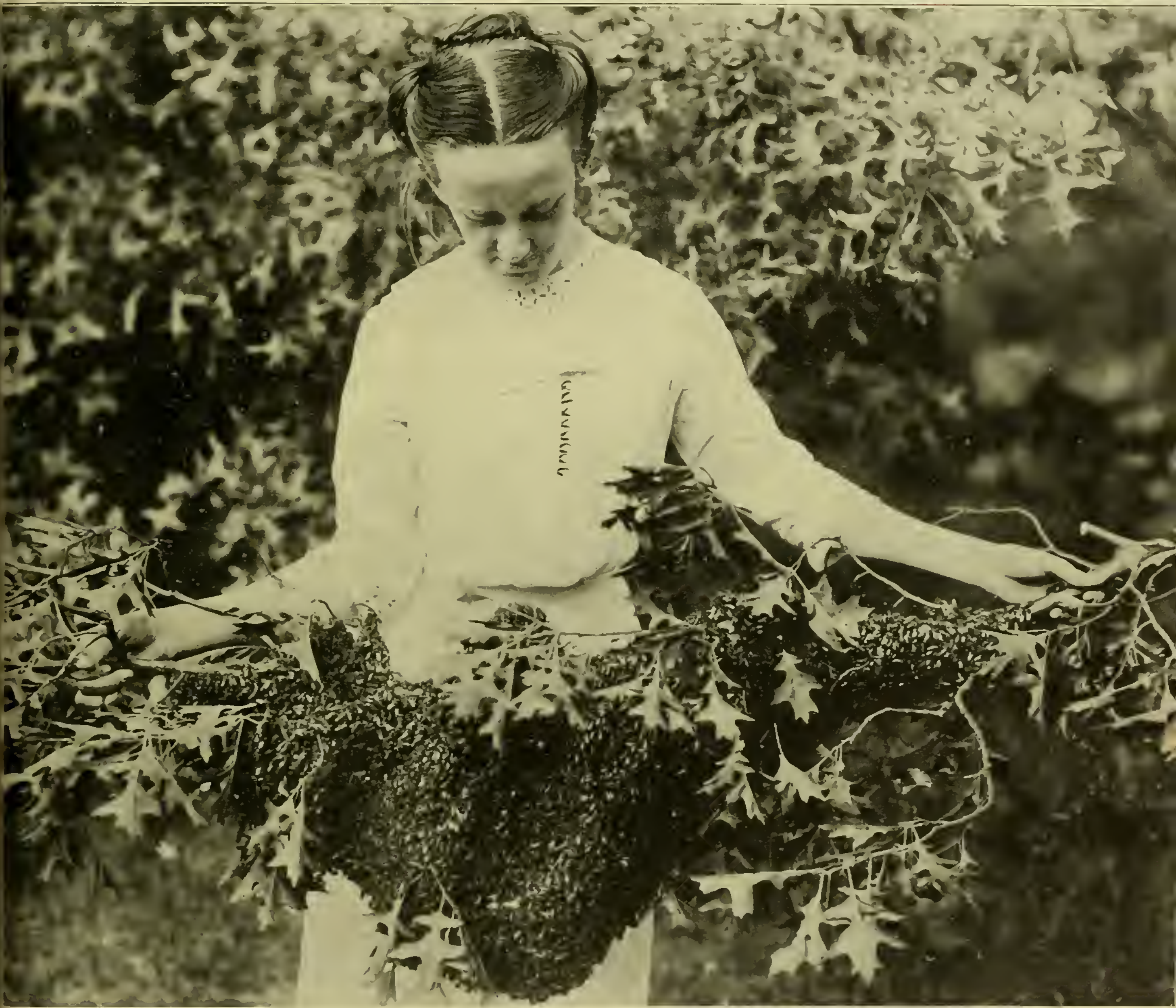

A September Swarm

The reader will find, in the Contributed Articles, a description of the gathering and hiving of this swarm, by a lover of Nature and an excellent photographer. Mr. Bigelow, who is editor of the "Guide to Nature," does not make claims of intensive bee-keeping, but he is an enthusiastic lover of the beautiful in Nature. A succession of photographs taken by him will be given in future numbers.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
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I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.
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This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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for fall sowing, both yellow and white bloom; new crop now ready. Best legume fertilizer, good pasture and hay. Price and circular, how to grow it, **free.** Also Kentucky bluegrass seed. John A. Sheehan, Falmouth, Ky.

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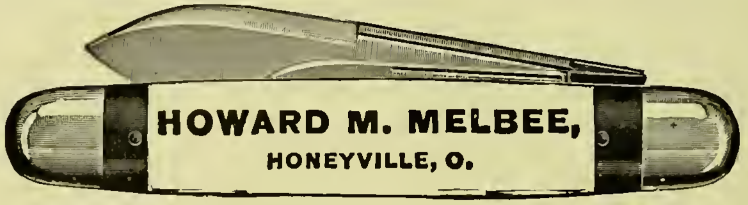

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

SURE, Old Combs are Valuable

IF SHIPPED TO US FOR RENDERING

We Extract 99½ Percent of Wax

And then Pay you Highest Market Prices, or 2 cents additional in Trade

YOU CAN'T APPROACH THAT FOR PROFIT

We need great quantities of Comb and Extracted Honey
Write us

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"The Busy Bee-Men"
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BEE KEEPERS:—
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George W. York
Sandpoint,
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A Home in the Northwest

Do you want a home in the best part of the Northwest—**Northern Idaho?** If so, let me hear from you. I have no land for sale myself, but can refer you to those who have. If you will let me know what you'd like, I can also then refer your enquiry to reliable real estate men here who can supply you. Remember, no irrigation is necessary here. It is a fine country for diversified farming—dairying, fruit-growing, bee-keeping, poultry, etc. You would be pleased if you could come and look this country over. But the next best thing is to do it by correspondence. I will be glad to help you in any way I can, if you will let me know just what you want.

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Several hundred thousand copies of this 16-page pamphlet on the uses of honey have already been distributed. It is one of the very best things to help increase the demand for honey. It not only contains many recipes for the use of honey in baking and cooking, but also tells a good many ways in which to use it as a remedy for colds and other ailments. The first few pages give much information about honey—how to reliquefy, how to keep it, etc. If you have never tried it, send for at least 100 copies. It will pay you to distribute it if you want to work up a home demand for your honey. Prices are as follows:

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Untested Italian Queen-Bees
Our Standard-Bred

6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

George W. York & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co, Kan, July 15. A. W. Swan.

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Ontario, Canada July 22. Chas. Mitchell

George W. York & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. Oglesby.

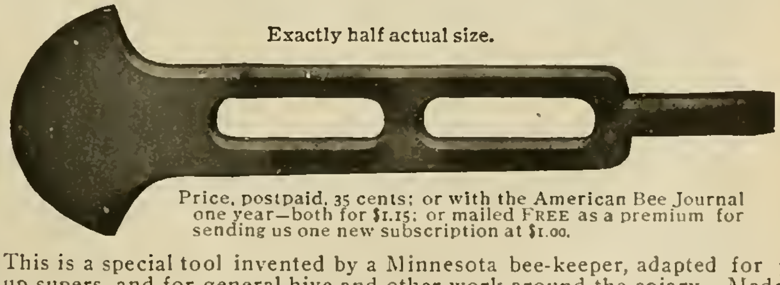
George W York & Co.:—The queen I received of you a few days ago came through O. K. and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line.
Marion Co., Ill., July 13. E. E. McColm.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50, or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

The Ideal Hive-Tool Free as a Premium

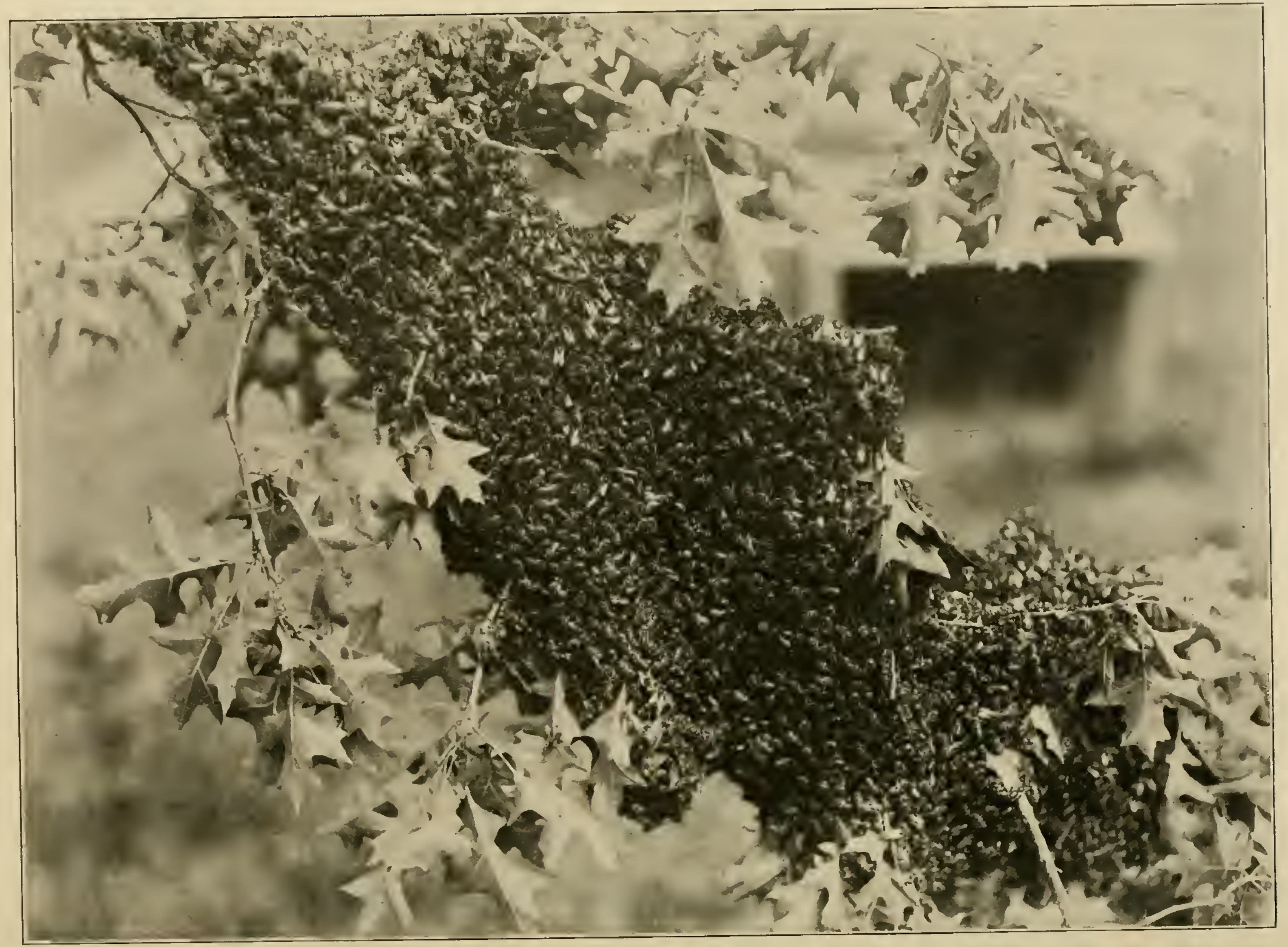
Exactly half actual size.



Price, postpaid, 35 cents; or with the American Bee Journal one year—both for $1.15; or mailed FREE as a premium for sending us one new subscription at $1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semicircular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.



Photographed by Edward F. Bigelow, Arcadia, Sound Beach, Conn.

"Without any Exaggeration There Seemed to Be at Least a Bushel Basketful of Bees."—(See page 338.)

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., NOVEMBER, 1912

Vol. LII---No. 11

EDITORIAL COMMENTS

Honey-Crop Reports

Secretary Tyrrell sent out to the members of the National Association, blanks for reports, and has published the result of the same in the Bee-Keepers' Review. He received 329 reports from 36 States, and publishes the number of colonies reported for each State for the spring of 1911, with the number of pounds of honey produced for that year; also the same for the year 1912. In many of the States the reports for the two years differ greatly; as, for instance, California reports about an eighth more bees in 1912 than in the year before, but only a little more than half as much honey. Somewhat curiously it turns out that the variations in the different States very nearly balance each other, when the whole is totaled.

The total colonies reported for 1911 number 33294, against 33140 for 1912.

Honey for 1911, 1,633,211, against 1,601,491 for 1912.

Average honey per colony in 1911, 49.05, against 48.32 for 1912.

Perhaps if the bees of 1912 had known there was so little difference they might have "humped" themselves a little more and brought up that other three-quarters of a pound.

Disposing of Sweet Water

The last number of the American Bee Journal contained a question as to what to do with sweetened water which must be thrown away. This was answered by Dr. Miller. It may be well to add that no sweet water need be thrown away which is not actually dirty. The water obtained from washing cappings, or cans or barrels, etc., which have contained honey is of value according to its degree of sweetness. Even when it may look dirty, it can be clarified. Of course, cappings contain pieces of broken comb, dead bees and other impurities. By heating the water and filtering it afterwards through a piece of muslin, most of these impurities may be removed and good vinegar obtained by one of the processes so often given in the Bee Journal.

Thorough clarifying may be secured by beating in it the white of one or more eggs, and allowing time enough to settle. This is the process used for wines. If the sweetened water is too weak, more honey may be added or it may be reduced by boiling. If too rich, water is added until the proper point is reached. In this country we are not accustomed to saving little things like this. We must learn to do so, for the high cost of living of which so many complain, is in great part due to the wastefulness of our nation. The wealth of the nations of the European continent is mainly due to their saving habits.

Shipping Old Combs and Cappings to Dealers

It is becoming popular to ship old combs, bits of wax and cappings, from the small apiaries to the dealers, to be rendered by them into beeswax. This method has been followed by European bee-keepers, on the Continent, for years, as apiaries there are small but numerous. The dealer or wax merchant is generally better prepared to squeeze out the last drop of wax from rendering combs than the small apiarist can be. In fact, many combs are allowed to waste without any rendering, owing to the inconvenience of rendering small lots.

We should, however, sound a note of warning to all who try this method. There is no surer way to transmit bee-moths and bee-diseases, especially foul brood, than through the shipping of unrendered combs. After the wax has been heated sufficiently to render it out of the slum-gum, it is harmless. But until then, if any germs lurk in the combs or in the honey that they may contain, you may be sure of disseminating disease if you ship them without proper precautions.

Combs to be rendered into wax should be entirely free of leaking honey. They should be put up in tight boxes, or the boxes should be lined with heavy paper to prevent the bees from getting at the combs in transmit. Better yet if the combs should not be shipped until cold weather. The burning of brimstone, or the use of bisulphide of carbon, will kill moths, but these drugs have no effect whatever upon the bacilli of foul brood.

Likewise, the dealer who receives old combs for rendering, should at once put them out of the reach of bees by rendering them or storing them in a safe bin.

With the above precautions, it is quite probable that the rendering of wax at wholesale by persons properly supplied with the necessary implements will result in a saving to the general public.

The Cause of the Drone's Death

On page 268, Mr. Scholl discusses "how often queens mate." He may be correct in his general view, but as to one of the details the writer differs. Scholl says "the hold of the queen on the male organs is of such force that they are torn entirely from the drone's body when the two separate." Then he adds, "This is the cause of the immediate death of the drone." If I understand that rightly, it means that the tearing away of the male organs is what causes death, and immediate death. I have frequently seen a worker with its entire abdomen torn away, and yet walking about apparently as much alive as ever. If tearing away the whole abdomen does not cause immediate death, it hardly seems reasonable to believe that immediate death would be caused by the tearing away of part of the abdomen.

Still, that may not be conclusive. Let me cite something else. When a drone of the proper age is held in the hand, a slight squeeze, perhaps only the warmth of the hand, will cause a violent contraction of the abdomen, making it only part of its former volume, the male organs will be forcibly thrust out, and instantly the drone is dead. In that case certainly the tearing away of the organs does not cause death, for there is no such tearing away; there is no attachment to the queen, and there is no queen in the case. Death seems in some way to be connected with the violent spasmodic action. Is it not reasonable to believe that the death of the drone is due to the same cause when he meets the queen?

Bee-Keepers of Iowa

The following letter speaks for itself. We hope our readers of Iowa, and those who formerly lived there, will comply with the request. The Editor will gladly attend the Iowa convention, and hopes to meet many acquaintances there:

DEAR SIR:—For the purpose of showing the status of the bee-industry in Iowa, I am anxious to get into communication with bee-keepers who are now located in other States, but who formerly lived in Iowa, in order to learn from them the average production of honey in their present location compared with their crop in Iowa. It is also desired to learn from those now living in Iowa, who formerly kept bees in other States, the comparison between their present production and that of their former locality.

The offer of the columns of the Bee Journal to assist the bee-keepers of Iowa in their effort to secure proper recognition from the legislature is much appreciated. If you will insert a note to the effect that the above information is desired, it will be of assistance.

Mr. W. P. Southworth, President of the Iowa Bee-Keepers' Association, writes me that he has had a conference with the Secretary, and that it has been decided to hold the convention at Des Moines on Dec. 12 and 13.

FRANK C. PELLETT,
Inspector.

Japanese a Wide-Awake Nation

We are receipt from the editor of the Japanese Bee Journal of a pamphlet containing the pictures of Father Langstroth, Mehring and Hruschka, besides a number of cuts of Japanese apiarists and implements. Being unable to read the Japanese language, we wonder whether this is a regular issue of their journal. In spite of patriotic vanity which leads one to believe that his own country is above all others, we must grant at least one point to the Japanese. Very few of us can read Japanese, but judging by the number of subscribers that come to the American Bee Journal from Japan, many of them must be able to understand English. We take our hat off to them. Japan is in the front rank of progress.

Bee-Diseases in Great Britain

In the British Bee Journal of Sept. 12, D. M. Macdonald says that "the question of disease is fast becoming an alarming one over large areas of our islands." He urges the prompt establishing of inspectors throughout the country. This is certainly a desirable move.

However, in regard to the "Isle of Wight disease," which is said to have been introduced by "*one* stock in the apiary in 1908," in a certain part of *one* county, we believe that a knowledge of the conditions which caused the disease, more than the isolation of the diseased colonies, is of importance. We base this opinion upon the fact that the "May disease," which is the same as the "Isle of Wight," if we are to believe all descriptions given, has repeatedly appeared spontaneously among bees in our Middle States, and has not proven contagious. It is certainly in the line of an epidemic, and until we can remove its *cause*, it is sure to reappear. We need the inspectors and the experiments of men of learning, entomologists and bacteriologists, to help us find both cause and remedy. The bee-keepers of the world are awake to the importance of this matter.

Bees and Alfalfa Seed

"Very few data are at hand relative to the value of insects in the production of a seed crop, but it is generally believed that they are necessary in order that the flowers may be fertilized properly. At the Kansas Experiment Station, alfalfa plants covered with a wire-netting, which excluded all insects, made no seed, whereas those plants that were adjacent but uncovered were filled with seed pods. Botanists all agree that insects are necessary to the production of alfalfa seed, but the farmers are more or less divided on this point. In many sections where insect life is scarce, dragging the alfalfa field with a plank or brush, or rolling it has been found greatly to increase the yield of seed."—*The Country Gentleman.*

The recognition of the importance of bees as fertilizers in so reliable an agricultural paper as the Country Gentleman is gratifying. While "dragging the alfalfa field with a plank or brush" may greatly increase the yield of seed, the question will arise whether it will increase it as much as would the presence of a good force of bees. Even if the bees be no better than the dragging, what about economy in the affair? There will be a definite outlay for the dragging that must be paid out of the seed. The bees will more than pay their own cost by the honey they store, doing the work of fertilizing free gratis. Cheaper to introduce bees than to drag.

Improving Bees in Finland

In another column is a report from Mr. Paul Mickwitz, of his trip from Carniola to Finland, with a shipment of bees. Those who met Mr. Mickwitz during his stay in the United States a few years ago, when he studied and practiced progressive bee-keeping with a number of noted apiarists, will not be astonished at his initiative, in thus transporting bees of the best breeds to his own native country. Mr. Mickwitz writes us that he has taken a few pictures during his trip, and that he will forward them to us as soon as they are developed. His bees are now in winter quarters in good shape. We wish him success.

Heather

Considering what an important honey plant heather is, the wonder is that more effort has not been made to induce it to make its home in this country. Across the water, especially in Scotland, heather honey is considered *ne plus ultra*, and D. M. McDonald says that "by all bee-keepers who live within reach of its bloom it is recognized as the king of bee-flowers." The honey is so thick that it cannot be extracted, but must be pressed or else used as comb honey.

Unlike white clover, which is scattered all over, easily accessible to bees located at the homes of their owners, heather is in large tracts away from the bee-keepers' homes, and those who would avail themselves of its nectar must transport their bees miles at the time of its blooming. Taking the bees to the heather is a great annual event. D. M. Macdonald, in the British Bee Journal, paints a picture of it in such glowing colors that one almost envies the Scotch their stretches of heather. He says in part:

"Over vast stretches of hill and dale it is found in lavish profusion, and the wealth of blossom makes the purple hills during August a vision of delight. For scores of miles there is one ocean of heather, stretching for leagues and leagues, in an unbroken sea of purple, and every yard of it scented like a honey-comb.

"In a few days thousands of bee-keepers, with tens of thousands of hives, resort to this El Dorado. All sorts and conditions of men transport their hives to the moors for a distance, it may be, of from 5 to 50 miles. Every description of hive is carried there, from the rudest form of 'ruskie' to the most advanced modern-frame hive. And the means of transport are as infinite, every sort of a vehicle being requisitioned, from the humble farm 'machine' to the stylish motor car, flying to the uplands at the rate of 30 miles an hour.

"In many parts of central Scotland this annual event is made an occasion of high festivity, a kind of yearly pilgrimage, and scores of bee-keepers from every village and 'clachan' unite to celebrate the occasion. Mere ordinary work is suspended by midday, and every man, woman, and child is expected to lend a hand in packing, in order that the cavalcade may start as soon as the cool of the evening allows the 'port-holes' of every hive to be closed."

A Question of Smells

A letter from Morley Pettit, the Ontario Provincial Apiarist, to the editor-in-chief of this Journal, shows that Mr. Pettit and Dr. E. F. Phillips are not entirely of one mind regarding the odor of European foul brood. Either because he does not care to handle so malodorous a subject, or because he thinks I am more at home than he with European foul brood, Editor Dadant has turned the letter over to me. While it is not true that I am at home with European foul brood, it is only too true that European foul brood has made itself very much at home with me. At any rate, here is the letter:

DEAR SIR:—In your editorial on "Dr. Zander on Foul Brood," in the last American Bee Journal, you make the statement that the average case of European foul brood may be said to be pleasantly fragrant compared with a bad case of American. This reminds me of a difference I have had with Dr. Phillips. He states, in his bulletin, that European foul brood has very little if any odor. I sent him recently a sample of European foul brood which has what I call a characteristic odor. The sample came 500 miles in the mail, and before the package was opened any one in the office holding it anywhere near his face could get the characteristic odor very clearly. After the outer wrapping was removed, it was necessary to remove the package from the office for the convenience of those working. I sent the package forward to Dr. Phillips, to show him what was the characteristic odor of Canadian European foul brood.

He wrote back saying that the odor was not noticeable when it reached his office at all. It makes me think that there must be something wrong with the smellers of the American bee-keepers, when they do not notice the odor, or else there must be a very great difference between Canadian European foul brood and United States European foul brood.

The average sample of Canadian European foul brood has a decidedly pronounced odor which cannot be compared to any thing that we might mention in the pages of the Bee Journal. Yours very truly,

MORLEY PETTIT.

Here are two men, in the word of either of whom I would place the greatest confidence, almost flatly contradicting one another. At least it has that look. In Europe, American foul brood is called *nichtstinkende Faulbrut* (non-stinking foul brood), and European foul brood is called *stinkende Faulbrut* (stinking foul brood). Mr. Pettit receives a much-traveled specimen of European foul brood of so vile a smell that it drives people out of the office. He forwards it to Washington, and Dr. Phillips says the odor is not noticeable. Is it that under the American flag, in this boasted "land of the free," European foul brood does not feel the same freedom to send forth its characteristic odor that it does under kingly rule in Canada and Europe, or is there, as Mr. Pettit suggests, a lack of olfactory development in the States?

In all seriousness it is not likely that the same stage of the disease may have a smell at all different in one country from what it has in another. And it is a matter of some consequence that there should be a very full understanding regarding the matter, if for no other reason than that the novice should not be confused unnecessarily when he has, or suspects he has, either European foul brood or American foul brood in his apiary. There is good ground for the belief that what will hold European foul brood in check may have no effect whatever upon American foul brood. So it is desirable that Messrs. Pettit and Phillips should come to entire agreement. From the character of the two men, one may judge that a thing very likely to happen.

In the meantime it may do no harm to speculate a little as to why there should be a difference in the sample whose smell in Mr. Pettit's office was so strong, and yet not noticeable in Dr. Phillips' office. It is reasonable to believe that in any given sample the odor is not continuously the same in strength. Like any other odor that comes from decay, it increases until it reaches its maximum, and then fades away. So it might be that Mr. Pettit had the sample at its maximum, and Dr. Phillips after its decline. Only it seems hard to understand how the decline should be so rapid.

For practical purposes, however, is it not more important to know how the disease smells in the apiary than to know about it some time after it has been taken from the hive? How has Mr. Pettit found it when opening up a diseased colony? How about a mild case? How about a very bad case? And, by the way, is there any agreement of opinion as to what constitutes a mild or a very bad case? What percent of the brood is diseased in the one case and in the other? Here is a point upon which light is needed. When Mr. Pettit speaks about a mild or a very bad case, does he mean exactly the same thing that Dr. Phillips does when he uses the same terms?

As a trifling contribution to the subject, I may say something about the smell of European foul brood "in this locality." When it was at its worst in my apiary, I do not remember that I ever recognized any odor upon opening the brood-chamber of a diseased colony unless I held the diseased brood close to my nose, and not then unless it was what I called a very bad case. If several stories of diseased brood were in a pile, when I lifted off the cover I would recognize the odor, not, however, as something unprintable, but rather as something mildly objectionable. I do not count it a matter of congratulation that European foul brood is more gently offensive here than in Canada, if there really is a difference. In that case, it is the Kanucks who are to be congratulated, for the worse it smells the better, since it will be the more readily detected. But I sincerely hope that the whole matter shall be fought out to a finish by our two leaders, one on each side of the line.

C. C. M.

Care of Sections

Sections that have had no honey in them may be kept over from one year to another, or even for a number of years, and if kept in a dry, proper place, they will be just as good as fresh sections. To be sure, there are some who say that foundation in sections is not fit to use a month after it has left the foundation-mill, but others have kept it for years and then found that the bees accepted it with entire satisfaction. If one is to be exceedingly exact, it is possible that foundation a month old is not quite the same as the day it left the mill, but the difference is so infinitesimal that the bees would not be able to recognize it.

It is a good thing that foundation in sections will keep over to another year or later. It would be exceedingly inconvenient for many if it were not so. For one who has a considerable number of bees it would not be at all handy to be putting foundation in sections when the flow of nectar is on. He must prepare his sections in advance. He cannot wait to know what the harvest will be. He must have enough sections ready not only for an average season, but for the largest possible crop. Then the season may turn out a failure, and it is a good thing for him that the preparation already made will stand good for the first good season that comes along

But a qualification must be made. While there may be sections 5 years old that are practically as good as new, thousands of sections may be found all over the country not fit to put on a hive, and yet the foundation in them is not a year old. It is because they have been left on the hives at a time when no honey was coming in. Early in the season it seems to do no harm, and it is better to have sections on the hive at least a little in advance of their being needed, for then the bees begin work on them more promptly when the flow does come. One cannot know in advance exactly when the flow will begin, so sections may be put on about 10 days in advance of the time they are supposed to be needed.

But to leave sections on the hive 10 days after the harvest is over is a serious mistake. At this time of year, if the bees cannot put honey in them they will be very likely to treat them liberally with bee-glue. And after a coat of bee-glue has been painted over the foundation in a section, the bees will not store in it. Even if no glue can be seen on it, the bees object to a section that has been left on the hive through the fall months. The writer has seen a section-super on a hive with every section in it filled with honey but one, and the foundation in that section not drawn out at all. The foundation in it looked all right, but something was wrong with it, perhaps a coating of propolis so thin that only the bees could recognize it; at any rate they would have none of it.

Sometimes one flow of honey closes, and then another flow opens in a few days, or many days, later. The bee-keeper thinks it is hardly worth while to take off the supers, but leaves them on until the later flow begins. Perhaps the later flow fails to materialize, and he waits day after day, finally taking off the supers only when winter is staring him in the face. When the flow ceases, take the sections off, even if it be in June. If another flow opens a week or a month later, it is no great task to put them on again. But remember that except very early in the season, when bees can do no good with sections they are likely to do harm with them. When off of the hive the sections must be sheltered from the dust or from the sunshine.

An Open Letter to Dr. Bonney

Dear Dr. Bonney, I'm not at all sure exactly what you do believe about improvement in bees, but at any rate I don't agree with you. That doesn't sound so very reasonable, and I may as well confess to you that I am more governed by desire than by reason. I don't agree with you chiefly because I don't want to agree with you. You hold up "Improvement in Bees" as a craze, and say you hesitate to subscribe to it. The general tendency of your teaching is to discourage any attempt at improvement.

The situation is peculiar. If you were to discourage attempts at improvement in any other kind of stock, it wouldn't make the same difference to me. If you were to get all my neighbors to believe that there was no use in trying to improve any other kind of stock, it would make no practical difference with me. I could go right on breeding pure stock and trying to improve it, and the scrub stock all around me wouldn't make a particle of difference. But if you get all the surrounding bee-keepers to believe that improvement in bees is a tulip-craze-south-sea-bubble affair, you knock into smithereens a large part of my chances for improvement, for the chances are heavy that my young queens will meet surrounding drones of poor grade. And the same thing applies to every other bee-keeper who desires to improve his bees. Don't you see that if you should happen to be mistaken, and if there should happen to be something to this matter of improvement, you are doing all you can do to hinder those of us who are trying to better ourselves? On the other hand, if it should happen that you are mistaken, what possible harm can come of it? But there are some of us who have had very good proof that we are not mistaken, and we wish you would stop trying to make a hard thing any harder for us.

I think the beginner will fairly infer from what you say that the *habit* of industry cannot be developed in the bee. And from that it will be only a short step for him to say, "All bees are alike in industry, and under the same circumstances one bee will gather as much as another." Yet I think you would tell him that under the same circumstances some bees will store more than others.

You say you believe management has more to do with surplus honey crops than the breed or color of bees. Well, suppose it has, does that not still leave it possible that the kind of bees is a very important matter? Some of my colonies store twice as much as others, the management being precisely the same. In such a case don't you think that the kind of bees has more to do with surplus honey crops than the management?

You quote Mr. Doolittle as writing a a book which was all management and not a word as to kinds of bees, and you seem to take that as proof that he lightly esteemed the kinds of bees. He wrote another book in which he has considerable to say about kinds of bees, and not a word about management for honey crops. If the first book proved that the kind of bees doesn't count, then the second proves that management doesn't count. The fact is that the book you quote was written specially to teach management, and it was not necessary to discuss kinds of bees, any more than it was necessary for him to discuss management for crops when he was teaching queen-rearing.

You ask what has been done toward *permanent* improvement, and refer to the opinion of professional bee-keepers. I suppose you would call me a professional bee-keeper; at any rate, I keep bees for the honey I can get from them. I am ready to take my "affydavy" that my bees are improved to such a degree that year after year I get from them crops of honey such as I cannot get from the best stock I can buy. Also I have improved (?) their viciousness to such a degree that they are holy terrors.

You say "the knowledge of man goes not back to the time when the bee was different from what it is now, excepting that we have yellow Italians." Why, Doctor, don't you know that the bee *is* different now? I'm sure you don't for a minute suppose that blacks, Italians, Cyprians, etc., are all alike. And I'm nearly as sure that you believe all these different kinds came from the original stock. And if the bee has changed into so many different kinds, why may it not change some more?

You quote me as saying that we are not sure that the royal progeny of a queen out of the ordinary will be like her. The same thing is true in horses, yet that doesn't prove that we cannot improve horses.

You think the bee cannot be improved because wild. Were not our most improved domestic animals originally wild?

Your closing quotation concerning the bee is "that little change has taken place in her characteristics in 3 or 4 *million* years. That's a clincher. Only it happens not to be true. Good authorities sometimes say foolish things. If little difference had taken place there would be little difference in bees, and any practical bee-keeper knows there is a big difference in bees, in other things as well as in color.

What you say in the preceding paragraph has a better ring to it. You quote with evident approval: "I do not know of any work in all apiculture that pays so well as weeding out poor stock." Let's shake on that, Doctor. It's only another way of saying that nothing else pays so well as improving your stock. For you hardly brimstone your poor stock to get them out of the way. You weed them out by requeening with better stock. What is that but improvement? C. C. MILLER.

"The Guide to Nature"

On the cover page of our Journal will be found a reference to the "Guide to Nature," a small monthly magazine devoted to anything but the *sordid* in life. Mr. Bigelow, of Arcadia, Sound Beach, Conn., is one of the rare editors who work for the love of the pursuit and the study of the beautiful. He writes us:

> "The 'Guide to Nature' and the Agassiz Association are both wholly labors of love with me, except, of course, the satisfaction of doing the work in Nature that I like to do."

The "Guide to Nature" makes delightful reading, and deserves more than a passing mention.

Making Experiments

When trying new methods of procedure with bees, beware of hasty conclusions, based upon experiments on only one or two hives of bees. Too often isolated experiences have proven to be exceptions instead of rules. To be positive, an experiment should be tried upon a number of colonies in different conditions, and both conditions and results noted. A repetition of the same results in two different seasons, under such conditions, will be quite conclusive. Much trouble has resulted from hasty and limited experiments.

Silly Stories in the Dailies

We are in receipt from Mr. Frank E. Whiting, of Massachusetts, of a newspaper quotation announcing the discovery of a stingless bee, in the same manner as announced in our Canadian Notes in this number. But the clipping goes further and gives the name of a Mr. Atwater, of Kingston, R. I., who rears "illuminated bees" by crossing them with lightning bugs.

There is no harm in a little "scientific pleasantry," provided everybody knows that it is a joke, but there are too many who are prone to take such jokes for the truth, witness the "scientific pleasantry" about manufactured comb honey, sealed over with a hot iron, which went the rounds of the press some 30 years ago and has never been fully extinguished in the minds of the credulous. Why should it be so difficult to get *truths* in the dailies, when they so readily publish silly stories?

Character Versus Mating

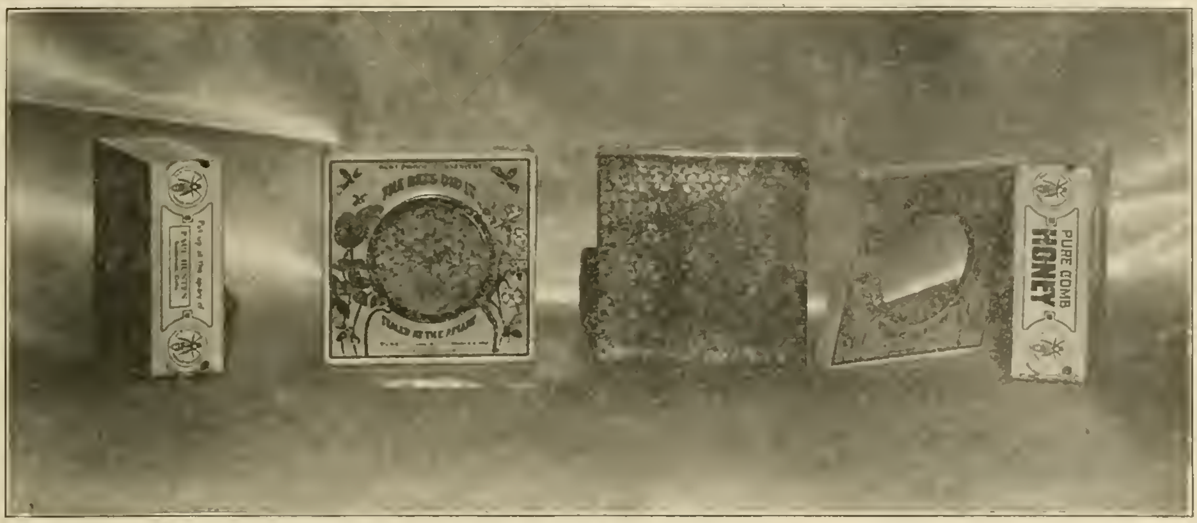
Mr. J. L. Byer's remarks concerning the gentleness of the progeny of queens mated with Italian drones or drones of gentle races tallies with our own. We had often noticed the gentleness of hybrids that issued from a black queen and an Italian drone, but thought nothing of it until we were told, at the Paris meeting of 1900, that it was generally conceded that the male gives the character of his race to the progeny. We would like to hear from authorities posted on this subject.

MISCELLANEOUS NEWS ITEMS

Six Better than C
following is quoted f
sent out by the Secr
souri State Bee-Kee
for increasing the me
body:

In order to increase
our State and National
ciation, I am offering six
Each 50 cents to be cou
stance, if you send 50 ce
with the name of an old
will be given credit for o
member of the Mo. B.
send the name of an old
$1.50, you will be given c
he will be a member of
tional, and will get the B
and other good things. $
edge is worth more to
than $50 worth of bees.
ciation are not allowed t
First prize, one 3-frame nucleus; second, one 2-frame nucleus; third, one 1-frame nucleus; fourth, one tested queen; fifth, one

honey exhibits are the very best advertisement that can be had for our



Different Views of Mr. Paul Hunten's Tin Section—"The Sanitary Comb-Honey Package."

product. Tens of thousands of visitors have their attention attracted to this industry, and the results are beneficial to all honey-producers.

◆

Iowa Bee-Keepers to Meet.—The following is the program of the first annual convention of the Iowa State Bee-Keepers' Association, to be held in the Club Room of the Savery Hotel, Des Moines, Dec. 12 and 13, 1912:

Thursday 10 a.m.—Address of the President—W. P. Southworth, Sioux City.
Report of Secretary-Treasurer—C. L. Pinney, LeMars.
Greeting from Illinois—C. P. Dadant, Hamilton, Ill.
Committee Appointments.
Thursday 2 p.m.—"Production of Comb Honey"—F. W. Hall, Colorado.
"Production of Extracted Honey"—D. E. Lhommedieu, Colorado.
"Wintering Problems"—C. H. True, Edgewood.
Friday 10 a.m.—"Fuss and Fun of Bee-Keeping"—Eugene Secor, Forest City.
"The Foul Brood Situation"—Frank C. Pellett, State Inspector, Atlantic.
"State Aid for the Industry"—E. E. Townsend, Ft. Dodge.
Friday 2 p.m.—Question-Box.
Open discussions led by prominent bee-keepers.
Making the most of the home market.
Increasing the forage and bettering the locality.
Exhibits at Fairs as a means of advertising.
Election of officers.

Let every bee-keeper bring samples of his best product to put on display, and come prepared to demonstrate any new kink or short cut that is likely to prove of value to the fraternity.

Headquarters will be at the Savery Hotel.

◆

"Imperial Valley Bee-Keeping."—The Pacific Rural Press of Oct. 5 contains an article upon this subject by A. G. Soares, and gives a picture of a class in bee-keeping. He speaks of one of the *boys* having 40 hives of bees and securing over a ton of honey this year. Let the good work go on!

◆

Death of a Prominent Canadian Inspector.—On Sept. 10, 1912, in Ottawa, Ont., occurred the death of Mr. F. E. Millen, one of the most widely known inspectors of Canada. Mr. Millen had had much experience with foul brood and its treatment throughout the province. He was also connected with the Ontario Agricultural College and the apicultural courses taught there, being also a member of the Apicultural Club. Mr. Millen wrote an article on foul brood, published in the August number of the American Bee Journal. Not alone his relatives, but all Canadian bee-keepers will miss his help and his experience.

◆

Tin Sections for Comb Honey.—On page 235, Mr. Wesley Foster made mention of an invention of tin sections for comb honey, by Mr. Paul Hunten, of Somerset, Colo. We now have several samples of those tin sections filled with honey and provided with a tin cover on each side, one side having a round glass $2\frac{1}{4}$ inches in diameter in the center. The section is covered with a fine, glossy label, which seals it efficiently. The whole thing has a very fine, artistic appearance. It is dust-proof and convenient. The only question now is the cost. We would like to have the inventor give a statement to the public through our columns. Honey put up in this shape will surely command the very highest price, if as white and well sealed as the samples received by us.

◆

Tolstoi's Description of a Queenless Hive.—Moscow was deserted. There were yet some human beings within its walls. But they numbered hardly one-fiftieth of its former population. The city was like a deserted hive, falling to ruins.

In a hive which has been abandoned by its queen, there is no longer any life, though from the outside it may completely resemble others. One sees, in the warm rays of the noon sun, a few bees flying about actively; the light structure smells of honey, some workers pass in and out. But look more closely and you will see that true life has left this hive. No, it is no longer the same fragrance, neither is it the same flights, the same roar, which strikes the ear of the apiarist. He gives a knock on the outer wall and instead of the immediate and unanimous reply which he expects, instead of the murmur of thousands of bees straightening up on their haunches with a flapping of their wings that renders almost a vocal sound, he perceives only isolated hummings which reverberate sonorously in the corners of the hive. The comb no longer emits an intoxicating aroma of spirits, honey and venom; it now smells of mold.

At the entrance no more guards are seen to watch over the security of the colony. The sweet and continued murmur, the quiver of labor, is ended. One hears but a few intermittent sounds. Into the hive, the black-bodied marauders, slim and smeared with honey, penetrate, or rather glide; they do not sting; they fly away at the approach of the least danger. Erewhile, it was with loads that the bees entered, now it is with loads that they depart.

The apiarist opens the hive and looks inside. Instead of rows of laborious insects, holding to each other by their claws and constantly busy in modeling the wax, a few heavy, sleepy-looking bees crawl from cell to cell. And instead of the shining waxy floor, swept clean by the wings of the workers, here and there fragments of comb or dying and dead bees cover the floor.

Then in the upper part of the hive, the apiarist perceives also a much different labor from that of former times. The black robbers pillage everything in the presence of the remaining habitants, who are seemingly old and paralyzed. In a cell containing dead brood or spoiled honey, one hears an irregular hum. A couple of bees, by force of habit, are cleaning the nest and carrying away the dead. In another corner two old bees are quarreling, or, perhaps, cleaning or nursing each other. One can see that they do not really know whether they should be hostile or friendly. Elsewhere a host of bees crowd upon each other, seize upon some victim and kill it. And the expiring bee, slowly, softly like down, falls from the hive upon a heap of corpses. The apiarist loosens the two center combs to examine them. Dead bodies everywhere! It smells of rottenness. A few inhabitants, the last ones, move, straighten up, then allow themselves to fall on the man's hand without having even the strength to sting, while others fall as inert as fish scales. The apiarist closes the hive to await the proper hour for burning up the contents.

Moscow was thus void when Napoleon, tired, anxious, marched upon the forts of the mother city, expecting, at least, the observance of the merest decorum, the arrival of a delegation.

When he was informed that Moscow was deserted, he frowned and walked about nervously.

"Bring a carriage," said he suddenly. —*Translated for the American Bee Journal.*

◆

A New State Bee-Keepers' Organization in Massachusetts.—On Sept. 14, at the State Mutual Restaurant, Worcester, Mass., Mr. J. B. Levens, of Malden, O. F. Fuller, of Blackstone, J. L. Byard, of Marlboro, A. A. Byard, of West Chesterfield, N. H., Arthur Monroe, of Spencer, and Dr. B. N. Gates, of Amherst, Mass., met at an informal dinner for the purpose of discussing the advisability and method of forming a State bee-keepers' association for Massachusetts. The invitation to this meeting was extended by Dr. Burton N. Gates, of the Massachusetts Agricultural College, acting as Secretary of the Hampshire, Hampden and Franklin Bee-Keepers' Association, which voted last spring to further the organization of a State society in which there should be representation and co-ordination of various local societies of the State.

The sense of those present in Worcester was so unanimously in favor of the movement that it was voted to form an association to be known as the State Bee-Keepers' Association of Massachusetts. Provisional officers were elected by unanimous vote as follows: President, John L. Byard; Vice-President, J. B. Levens; Secretary-Treasurer, Burton N. Gates.

The constitution and by-laws were discussed, a memorandum drawn up and authorized, and submitted to a committee composed of presidents and and others of the several societies now existing. It was further voted to hold the first annual meeting of the organization on the second Saturday in January, 1913, as a joint meeting with the Worcester County Bee-Keepers' Association, in Worcester. It was furthermore voted to announce this organization through the courtesy of the American Bee Journal.

Briefly, the organization is designed as a medium of union and co-ordination of the various local societies in Massachusetts, for the purpose of devising and promoting measures that are of general interest to the bee-keepers of the State, and to encourage the organization of local co-operation in the several districts of the State, as well as to promote and impress upon the public the importance and value of the bee-keeping industry.

Since this organization is distinctly in the interest of individual bee-keepers of the State, the Secretary solicits suggestions, and will gladly correspond with those interested.

Burton N. Gates, *Sec.*

Amherst, Mass.

◆

Kansas Bee-Keepers' Exhibit.—The exhibit of bee-culture at the State Fair at Hutchinson, Kan., was very creditable to the State association and the management of J. J. Measer, the Superintendent of the Apiary Department. The bee-keepers' display occupied one wall of the Agricultural Building, and made up about a tenth of the entire agricultural and horticultural exhibit. This is a wonderful showing for so small a branch of farming in a State which the people of the Middle West have too long considered as unfit for bee-keeping.

The meeting of bee-keepers which was called at 10 o'clock a.m. Thursday, Sept. 19, at the Fair Grounds, by P. R. Hobble, president of the State association, was attended by a limited number, owing to the attractions of the Fair, which had the usual effect of keeping many away from the meeting room. But important action was taken in a resolution passed to urge the incorporation of the State association in imitation of the Illinois State Association. Expression was also given by several members to a desire of joining the National Association, when it could be effected at a regular meeting.

The matter of education in bee-culture by a course at the Agricultural College was also discussed and favorably viewed. It is evident that future meetings of this association will bring about desirable results. These matters were urged by Dr. G. Bohrer, of Lyons. P. R. Hobble, of Dodge City, and the Editor of the American Bee Journal, who was present as judge of the bee and honey exhibit.

Mr. J. J. Measer stated that the fine display was very encouraging, and that an increase would probably be made by the management both in the number of premiums offered and in the amounts given, to encourage still better exhibits next year. This will give additional impetus to the efforts of bee-keeping throughout the State for the coming season. No better way to advertise our products can be devised.

Photograph of Those Ppesent at the Meeting at Hutchinson, Kan.

Top row, left to right—J. A. Nininger, Mr. Southerland, W. S. Measer, C. P. Dadant, J. J. Measer, Mr. Raffington, Mr. Carson. Bottom row—Daughters of W. S. Measer, Dr. Bohrer, President Hobble, Edith Measer, Mrs. J. J. Measer, Mrs. W. S. Measer.

◆

Meeting of National Association Delegates.—Notice is hereby given that the Delegate meeting of the National Bee-Keepers' Association will be held in Cincinnati, Ohio, Feb. 12 and 13, 1913.

While *all* sessions will be open to the members and visitors, some sessions will be devoted *wholly* to business, through the delegates. At least one session each day will be set aside for the members to discuss such subjects as may be decided upon later, notice of which will be given out by the Secretary.

The subjects that will likely be selected for discussion will be of national character rather than pertaining to the production of bees and honey.

E. D. Townsend, *Chairman.*

Remus, Mich., Oct. 1.

◆

Colorado Bee-Keepers.—The Colorado State Bee-Keepers' Association publishes a directory, in the shape of a little folder of 16 pages, besides the cover. This directory gives the names and addresses of the members, stating whether they have honey or bees for sale, and whether they handle supplies. It also gives the names and addresses of the officers and of the inspectors. It contains a few advertisements which have evidently helped to pay the cost of the directory.

This example is worthy of imitation

by other States. We are just beginning to realize the value of co-operation.

◆

Elementary Schools and Bee-Keeping in the Black Country. I have been fortunate enough to secure a garden for 14 of the boys attending my school. For hand and eye training last winter we made a hive in school out of old, though good, timber. On May 15, I received a colony of bees on 6 frames, and with the help of my young gardeners, transferred it to to the hive. Their arrival excited no small interest in the school and immediate neighborhood. Four frames of foundation were given it, and, with the fine weather, it was soon busy.

On June 19, a large swarm issued, though I had put on a super of sections, which the bees never attempted to work. I might mention that I had taken out 2 of the new frames, which were well worked out, in order to crowd the bees into the sections. The boys and I at once replaced these frames, and successfully returned the swarm to the hive, also putting on a second super of sections.

The boys, at the visit of His Majesty's Inspector, opened the hive and showed him the various parts, and were left to replace everything. About 8 o'clock that evening, a boy came to me in breathless haste to tell me that all the bees were out of the hive on the alighting-board, and some of them were "running like mad up and down the sides of the hive outside.' I told the boys, who were there weeding their plots, that evidently the queen was missing. We removed the cover, and the first thing we saw was the queen on the side of the section-case by the back of the hive. The boys had carelessly put the metal end of one frame on the next, and the queen had crawled out through the hole thus left. After returning her, in an incredibly short space of time every bee was in the hive.

We have taken nearly 30 completed sections of honey from our one colony, and the whole 10 frames are covered with bees, with plenty of stores, even in this abominable summer. Headmaster, St. Mark's School, Tipton, Staffs.—*British Bee Journal.*

◆

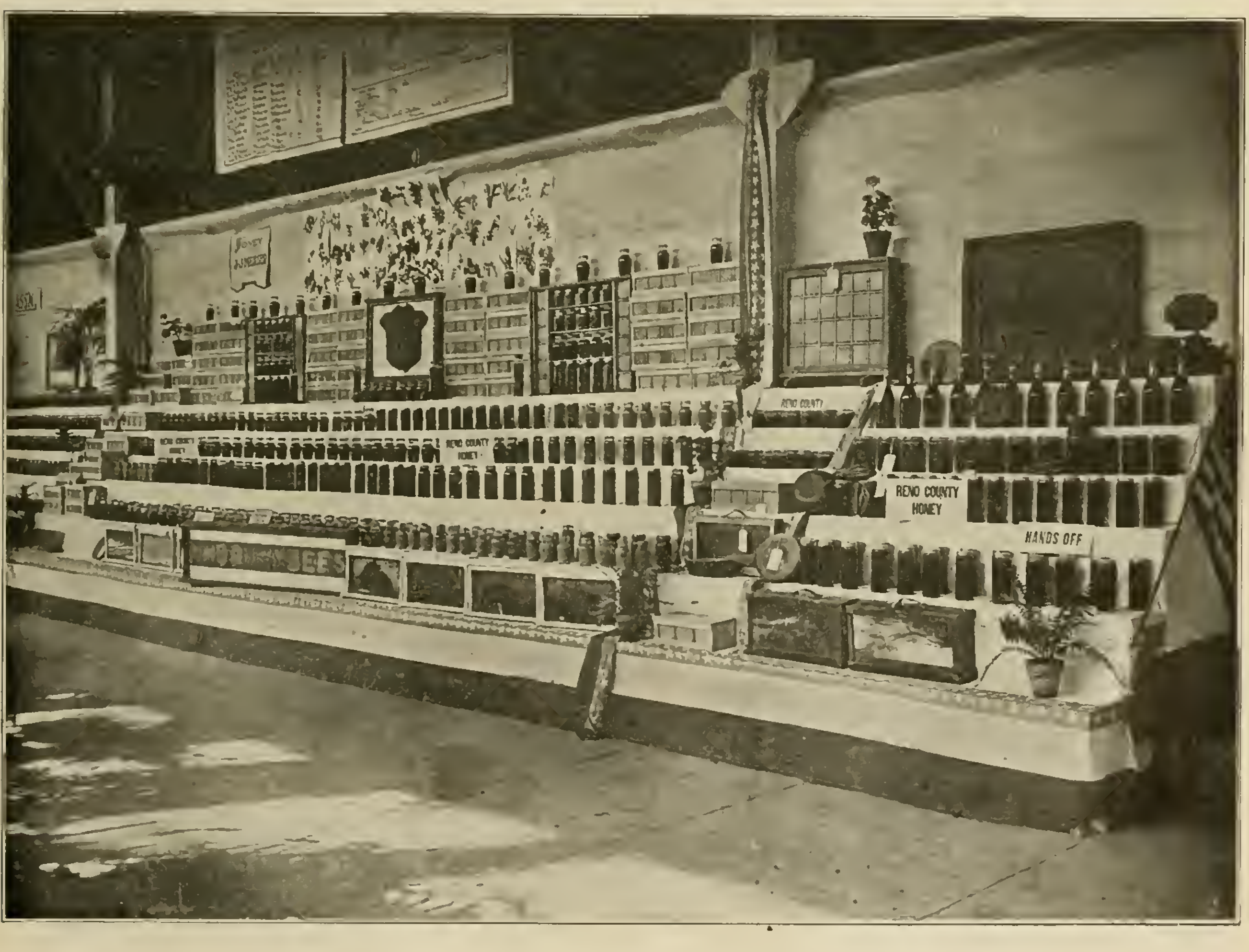
The New Mexico Fair and Premiums.—This office is in receipt of the "Year Book" of the Pecos Valley Fair, Roswell, New Mexico. The apiarian department is recognized to the extent of $41 in cash and a number of premiums on supplies, such as sections, extractors, etc. This department is in charge of Mr. Henry C. Barron, of Hagerman. The Fair took place Oct. 1 to 4. The earnestness of the managers in soliciting exhibits cannot be too highly commended. Judging by the cuts published, the Pecos Valley is a great country for orchards.

◆

The Sting of the Bee Versus the Sting of the Digger-Wasps.—In the September number, we quoted the French entomologist, J. H. Fabre, concerning the bee-eating philanthus, one of the many different species of digger-wasps. The same renowned writer calls attention to the fact that the sting of these digger-wasps, who burrow in the ground to breed and feed their young upon the bodies of other insects, is deprived of the barbs found upon the bees, who use this instrument for defense or revenge.

"The victims of the hymenopters, whose larvæ live upon prey, are not truly dead, in spite of their often complete inertness. There is in them either total or partial paralysis; there is a suppression more or less complete of animal life; but a vegetating life, a life of the organs of nutrition maintains itself for a long time yet, and preserves from decomposition or decay the prey which the larva is to devour at a more or less remote time. To produce this paralysis, the hunting hymenopters use precisely the same process which advanced science of our day might suggest to the experimenting physiologists; that is to say, a lesion of the nervous centers of their organs of locomotion through the use of the venom-bearing sting."

After describing the work of the



North Half of the Honey and Bee Exhibit at the Kansas Fair.

digger-wasp "sphex," which feeds its larvæ upon paralyzed crickets in underground burrows, he says:

"The sphex's task being completed, I will terminate mine by the examination of his weapon. The organ which elaborates the poison is composed of two tubes, elegantly ramified, converging to a joint reservoir or pouch, in the shape of a pear. From this pouch a minute tube plunges into the axis of the sting and brings to its extremity the droplet of poison. The sting is of very minute size, considering the size of the sphex, and especially judging by its action upon the crickets. Its point is perfectly smooth, entirely deprived of the barbs which are found upon the sting of the honey-bee. The reason of this is obvious. The honey-bee uses its sting only to take revenge of an injury, even at the cost of its life, the indentures in the sting resisting its withdrawal and thus often causing mortal ruptures in the viscera of the abdomen. What could the sphex have done with a weapon that might have been fatal to it upon its first expedition? Supposing that it be easy to withdraw the sting when barbed, I doubt much that any hymenopter using its weapon to wound the game destined for the food of its larvæ is supplied with a barbed sting. For this insect, the sting is not an instrument to be drawn in the satisfying of revenge, the delight of the gods, they say, but expensive delight, since it often costs the bee its life; it is an instrument of labor, a tool upon which depends the future of its young. It must, therefore, be of facile use in the fight with the prey; it must plunge into the flesh and withdraw with ease, a requirement much more easily filled with a smooth weapon than with a barbed sword."

Regarding the comparative effects of the sting of this insect and of the honey-bee, Fabre says:

"I ascertained, at my own expense, the pain inflicted by the sphex's sting, which numbs its robust victims with such frightful speed. Well! I confess with great admiration, that this sting is insignificant and cannot in any manner be compared with the intensity of pain inflicted by the honey-bees and the fighting wasps. It is so little painful that I often afterwards handled the living sphex with my fingers instead of using pincers.

"One knows also with what fury the fighting hymenopters thrust themselves against the audacious being who disturbs their home and punish his temerity. On the other hand, those whose sting is intended for deadening their prey are very peaceable, as if conscious of the importance of this poison for their descendants. This droplet is the safeguard of their race. I would almost say its bread-winner. So they use it with economy, and only in the incidents of the hunt, without parading a vindictive courage."

Although the above remarks have been written some 40 years, and the facts recited are well known to entomologists, they are new to most of the uninitiated, and very interesting.

JOHN S. HARBISON

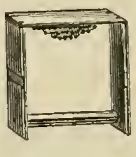
Pioneer Bee-Keeper Called by Death

By the enclosed San Diego clipping, note the passing away of one of the pioneers of bee-keeping—one who invented a movable-frame hive and brought bees in them to California. The few bees brought previously were infected with foul brood, from which our State has never recovered.

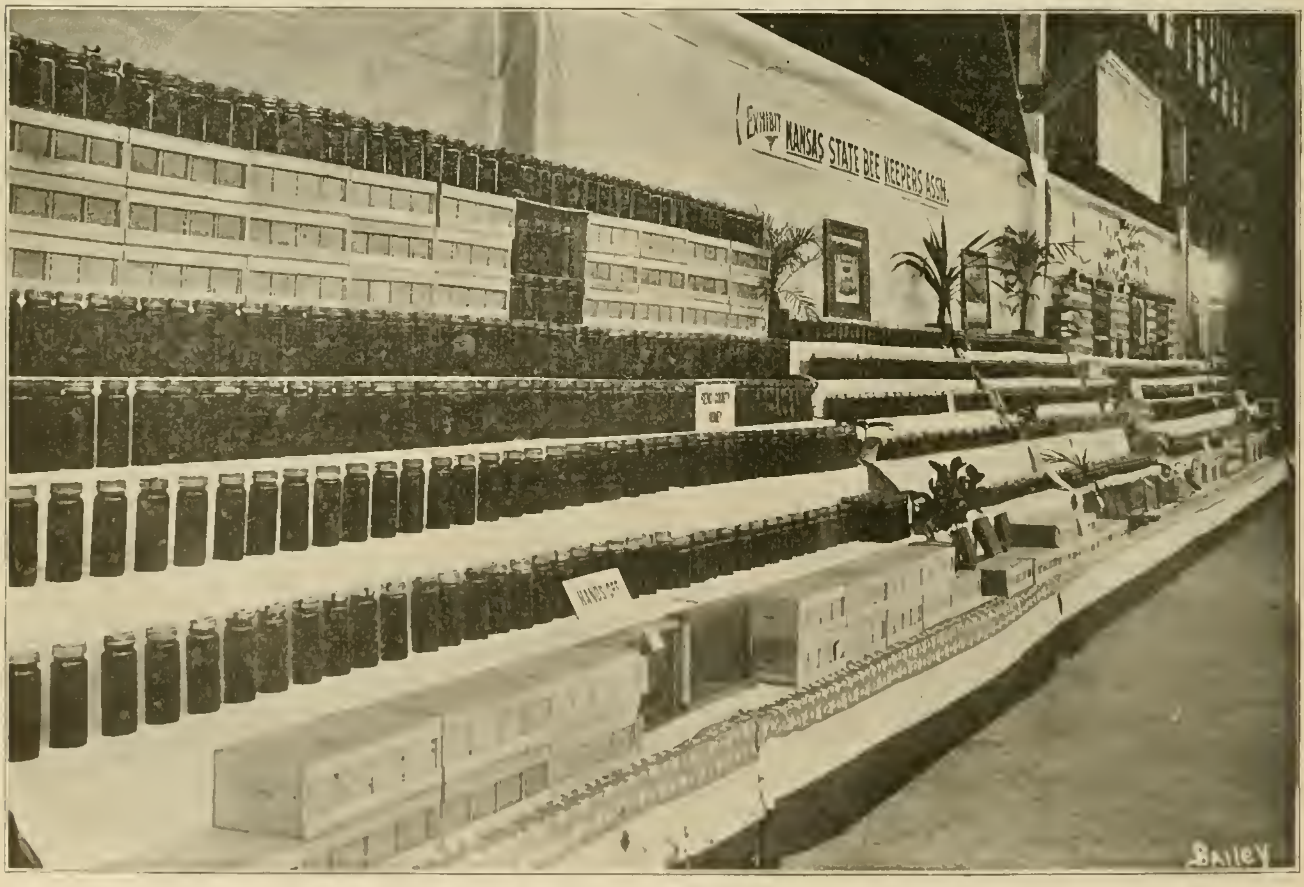
I have known Mr. Harbison for 37 years. He was inflexibly honest in all his dealings, and was always willing to impart his knowledge to any one. He brought bees into this county in 1869, and has owned 3000 colonies at a time. The first shipment of comb honey East was in 1874—over 200,000 pounds—and all his own. It was stored in 2-poun sections, and very beautiful.

John S. Harbison.
Taken from Am. Bee Journal July 13, 1893.

He never used an extractor, and never wanted to use 1-pound sections, saying his sections (which were nailed together) were the kind. He owned several hundred colonies of bees at the time of his death. His apiaries were east of the city of San Diego, some 30 or 40 miles near the Mexican line.



Original Harbison Honey Section.



The South End of the Apiarian Exhibit at Hutchinson, Kan.

He has made his home for many years in the city of San Diego, but he often visited his apiaries. G. F. MERRIAM.

The following was taken from a San Diego paper:

> Death called the man who introduced bee-culture and deciduous fruits in California, when John S. Harbison expired Oct. 12, 1912, after a lingering illness in this city. He was a pioneer of San Diego, and one of the earliest residents of California.
>
> John S. Harbison was born in Beaver City, Pa., Sept. 29 1826, and was 86 years old at the time of his death. He came to California in 1854, and for 20 years resided in Sacramento, coming to San Diego with his wife in 1869, and has since resided here. He brought bees and trees to the early California by way of Panama from New York to San Francisco in 1857. He was the author of several volumes on bee-culture.
>
> Mr. Harbison was well known all over the coast. He was a prominent Mason, and a life member of the State Agricultural Society. His wife, Mrs. M. J. Harbison, and daughter, Mrs Hinkle, survive him.

Illinois Prospects.—The bees are apparently going into winter quarters in good shape, with plenty of good honey and a sufficient force. The white clover is showing in every direction. 1913 should be a good year for bees in this region.

◆

Bees Besiege Honey Thieves.—When J. M. Cornelius, of Sterling, Colo., a honey-producer, awoke one morning, he found that during the night 15 bee-hives had been looted of 50 pounds of honey. He followed the dispossessed bees to the home of two brothers by the name of Bennett, living a mile away. There he found the bees swarming about the house, while the Bennetts, besieged, had closed the door and windows, and were afraid to go out.

Mr. Cornelius swore out warrants for the arrest of the Bennetts. They admitted the theft.—*Exchange.*

Bee-Keeping For Women

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Advice on Bee-Keeping as a Source of Income

A letter which excites no small interest comes from a sister who has a daughter who is teaching, and a son who is growing into young manhood, living in one of the larger cities. She says in part:

> "We all have a great desire to live in the country, and the thought has come that perhaps we could do so and keep bees. Do you think we could make a living at it? Have you any idea what it would cost to start an apiary? And do you think we could learn the business, or is it overcrowded already? We are anxious to get into something that my daughter and I could take care of later, for she does not want to teach always—it is really too hard for her—and the only way I can help in town is by sewing, and when I do much of that I have headache all the time."

Answering those questions categorically: It is more likely you would make a dead failure than that you would make a living in a business that requires knowledge and skill, since you have neither knowledge nor skill in bee-keeping. A capital of $1000 might be sufficient to give you enough bees to occupy your attention. But why answer any further if only failure is in prospect?

This failure, however, is on the supposition that you start into the business as a full-fledged bee-keeper, without serving any apprenticeship. That is not the only alternative. You can learn the business, beginning on a small scale and increasing the number of your colonies as your knowledge increases. Thousands have done so, why not you? The business is not overcrowded so long as tons of honey are going to waste for want of bees to gather it, and so long as there are thousands of people who eat honey only as a luxury, and thousands more who never eat it at all.

Still, bee-keeping is not a bonanza. Only a small percent of bee-keepers make their entire living from it. Generally it occupies only part of their time, and that the smallest part. Some are specially adapted to bee-keeping; some are not. You can only tell by trying whether you are or not.

The most difficult thing in your case, to the view of an outsider, is making a start. It may or it may not be possible for you to keep 2 or 3 colonies of bees right where you are living now. Some keep bees on the roofs of their houses in cities. But you may not have a flat roof adapted to the purpose. Possibly you may have a back-yard that is somewhat secluded, so that bees would not be likely to sting passers by on the street.

It would be much better if you could be living out in the country, at least a little way, where you could still have the chance to go on as you are doing, and at the same time have plenty of room for your bees. Not that it takes so very much room to place the hives.

A hundred hives may be so placed that they will need no more than 5 square rods of ground. But bees need a good bit of elbow room outside of their hives, and should have their hives at some distance from the public highway. There is no small difference in the tempers of bees. Some are so gentle that they might safely be placed within a rod or two of a public road, while others are so cross that they should not be within 10 rods.

Let us suppose that it is possible that by next spring you can be located as suggested, at least a little way in the country, and that you want to make a start at bee-keeping. You will want at least 2 colonies to start with, and not more than 5. You can get a lot of experience with 2 colonies, and if you should conclude to give them up after a trial, the loss need not be great. You will not buy before spring, and you can no doubt buy from some one near by, for bees are not accepted by the railroads as freight in less than car lots, and expressage is very expensive. It is possible, however, that by next spring bees can be sent in light shipping-cases by parcels post at reasonable rates. Then you can increase to double your number or more the first year, and with increased experience the increase may be rapid afterward.

In the meantime you will do well to get one of the leading text-books on bee-keeping, and read up during the winter. A good bee-journal will not come amiss, and if you have the American Bee Journal you will have the advantage that whenever there is any question upon which you desire information your questions will be answered without any expense.

This is not a very brilliant picture of making a fortune at bee-keeping, but it is about the only picture that can be given in strict accordance with the truth. There are not many lines of business in which there is not a better chance to make big money. On the other hand, there are few lines of business in which a moderate income can be made with the same chance for health and happiness while at the business. If you have the right aptitude for bee-keeping you will find it a fascinating occupation. Your true bee-keeper is living his vacation every day while working at his bees, always provided he does not work too hard at it. Many a sister living in the city might be the richer to move into the country and have a much smaller income than in the city. The outdoor air and exercise at bee-keeping would be a rich compensation for the smaller income. A cow, some poultry, and a good garden would go a long way toward lessening expenses, with the advantage that everything would be as fresh and fine as the richest dweller in the city could secure at highest price. A born bee-keeper is not likely to be rich, but is very likely to be healthy and happy, with a long lease of life.

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The Season's Crop

This has been a peculiar season in many respects. Very early it promised to be a complete failure so far as the honey crop was concerned, and until June 25 there was "nothing doing" except feeding to keep from starving.

Then the belated clover put in an appearance, and the first we knew one of our colonies swarmed, and we concluded we had better be doing something, so we put the supers on in short order. They were put on in the afternoon, and the next morning, in many cases, there was honey in the supers, so promptly did the bees commence storing in them. Doubtful if they ever commenced quite so promptly, at least in such a wholesale manner before. We had felt that we would be quite satisfied if they would only make their living, so you can imagine we were quite pleased at the very sudden change in affairs. We have had frequent rains all summer, and quite a bit of cool weather, but it has kept the clover in fine condition. Also it has given us a good fall flow from hearts-ease. We

THE BEE-MEETING AT CORTEZ, COLORADO.

From left to right, top row—No. 1, Mrs. E. M. Jordan, Secretary of the Montezuma Bee-Keepers' Association; No. 3, Mrs. T. G. Wilkerson; No. 6, Mrs. Geo. Taylor; No. 8, F. L. Luce, Vice-Pres. of the Association; No 9, Frank Rauchfuss, Manager of the Colorado Honey-Producers' Association, Denver. Bottom row—No. 1, Frank Taylor; No. 3, T. G. Wilkerson, President of the local Association; No. 4, Geo. Taylor, County Apiary Inspector.

have an average of 93 sections per colony, beside a little extracted, and this includes some poor colonies that never gave us a section. Not so bad for a season that did not open until June 25.

Oatmeal Bread With Honey

Measure a cupful of rolled oats into a mixing bowl; beat into it 3 cupfuls of hot water with a teaspoonful of salt and a tablespoonful of butter dissolved in them. Then beat in one-half cupful of honey drawn from the comb. When cooled to blood-heat add one-half yeast cake, dissolved. Stir in flour to make stiff enough for kneading. Let raise over night. Knead and make into two loaves. Let raise again. When double in bulk brush over the tops with one teaspoonful of honey and two teaspoonfuls of milk, blended. Bake an hour, or a little longer, in a medium oven.

One-half cupful of seeded raisins, or coarsely chopped dates or figs can be added to this bread; or chopped nuts.—*Chicago Record-Herald.*

Cleopatra Neck Bleach

Extracted honey, one ounce; lemon juice, one teaspoonful; oil of bitter almonds, six drops; whites of two eggs. Enough fine oatmeal to make a fine paste.

Spread this thickly on a piece of cotton cloth 3 inches in width, and tie as a bandage around the throat. Four or five of these applications should bleach the neck to a satiny whiteness. Remember, this is not a face bleach, and that oil of bitter almonds is a poison, and must not be swallowed or left in the reach of children.—*Chicago Record-Herald.*

Bird's-Nest in a Bee-Hive

"We read that on a farm at Nyon, near Geneva, Switzerland, a pair of linnets built a nest in a bee-hive in the spring, and have continued to live on the best of terms with the bees. There are now several eggs in the nest, and the birds and insects fly in and out, using the common entrance."

The foregoing, clipped from Our Dumb Animals, is sent by a friend, who asks, "Do you believe it?" Well, yes! maybe. Some little depends upon the kind of hive. In an ordinary hive, with a strong colony, the thing would seem impossible. In a very large hive, with a small colony and a large entrance, the nest might be so much out of the way of the bees that they would tolerate it.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Selling Apples at Auction

The sale of box apples has been increased 500 percent in Chicago during the last few years, according to John Denny, before the International Apple Shippers' Association convention in Detroit. This increase has been largely brought about by selling apples at auction.

Briefly stated, this method consists of allowing the buyers to inspect sample cases of all grades and brands in every carload sold. These are then sold at auction, each brand separately until each car in turn is disposed of.

The objection that this system of selling apples takes the trade from the regular fruit house and turns it over to the huckster is counterbalanced by the fact that these hucksters increase

PICNIC GROUP AT BOULDER, COLORADO.

Top row, left to right—W. H. Buckholtz, M. J. Garhart, W. C. Evans, F W. Bader, A. A. Lyons, Chas. Dehn, A. Elliott, Harry Crawford, E. J. Stevenson. Center row—Oliver Foster, Mrs. Oliver Foster, Mrs. A. F. Foster, A. F. Foster, Mrs. Chas. Dehn, Mrs. Harry Crawford, Mrs. Wesley Foster (the baby), Dora May Foster. Lower row (the children)—Dora Crawford, Fay Lewis, Paul Dehn, Floyd Dehn James Crawford, Miles Crawford.

the demand for fruit in greater proportion than they increase their own sales.

Montezuma Bee-Keepers' Meeting and Picnic

A call was issued through the local papers of Montezuma county, and also by postal notices for a meeting of bee-keepers at Cortez, Monday, July 29. A basket lunch was included. Mr. Frank Rauchfuss, manager of the Colorado Honey-Producers' Association of Denver had been asked to come and give a talk and demonstration on grading comb honey. He was present, and gave a very profitable demonstration. The new rules of the State Bee-Keepers' Association were the standard he used, and it was the first time the writer saw grading done according to the new standards.

Mr. Rauchfuss advises the production of comb honey wherever a white article can be produced. He pointed out that Colorado has an advantage in comb honey shipments, and is at a disadvantage on account of rates in extracted honey. California has a better rate, and a honey that will stay liquid much longer than the alfalfa and sweet clover honey from Colorado.

About 20 bee-keepers, half of them ladies, attended the morning meeting. The writer spoke on the foul brood situation in Montezuma county, and the methods of treating the disease. Questions were asked, and one could see that bee-keeping is an interesting topic in that county.

Many of those attending had driven 10 to 20 miles to the meeting, and were hungry when the basket lunch was spread out on the grass under the trees. Mrs. Jordan, one of the most enthusiastic bee-keepers, had made a cake lettered with the name of the bee-keepers' society which she and many of the others wanted to have formed, and which was organized at the close of the meeting. She called it the birthday cake of the society. The fruit attracted the attention of the writer more than anything else, and he cannot tell how many cherries, as large as plums, he did eat.

One of the ladies had some Ben Davis apples of last year's production that were still perfect, had wilted but very little and had not been in cold storage. The apples of the Montezuma valley are more highly colored than any I have yet seen.

Fine exhibits of honey were there from the apiaries of Geo. Taylor, Frank Taylor, and T. G. Wilkerson.

After our picnic dinner, when the afternoon meeting opened, about 40 gathered in the court room, where our meetings were held. Mr. Rauchfuss went into the comb-honey proposition very thoroughly, and the subject was enjoyed by all present. One bee-keeper told me that when Mr. Rauchfuss came back a larger crowd could be gotten together.

One of the features of the meeting was the showing of most of the modern bee-keeping appliances, each appliance being carefully gone over by those present. It was the intention to have hive nailing and super filling demonstrations, but the time was limited, and all that could be done was to show some of the best things that are used in a bee-keeper's practice.

At the close of the meeting the Montezuma County Bee-Keepers' Society was formed with 20 members. Mr. T. G. Wilkerson was elected President; H. L. Luce, Vice-President; Mrs. E. M. Jordan, Secretary-Treasurer. The association is to hold meetings the last Saturday of each month, in the afternoon following a picnic dinner.

One of the first lines of work taken up by the association, is the making of a display of honey at the Fair to be held in Cortez some time in October. The association will also help in giving backing to Mr. George Taylor, the apiary inspector.

Yellow Cleome

Yellow cleome (Rocky Mountain bee-plant) grows in the Grand valley of western Colorado. The yellow variety that I saw was of a shorter growth than the purple and better known kind. The yellow grows about 2 feet in height; but in all respects except color and height is the same as the purple.

A Bee-Keepers' Picnic in Boulder

The bee-keepers of northern Colorado were invited to a meeting and picnic at the home of A. F. Foster in Boulder, Sept. 7. About 25 were present, including women and children. The day was a perfect one, and the large lawn and abundant shade aided in giving pleasure to the occasion.

There was no program and no speeches. But bees were the principal topic, although automobiles for the bee-man did take up quite a little of the time. No bee-keepers can talk very long without coming around to the question of increase. As so many in northern Colorado have lost a large percent of their colonies, the Alexander plan of increase was "trotted out," and every one who had used the method testified to its great value. There is a tide in the affairs of bees, which, taken at its flood, leads on to fortune, and the Alexander plan takes the tide at the flood in beedom without a doubt.

Much interest was manifested in the sanitary comb-honey package, which the writer exhibited. Considerable criticism was made of the super, and some said that the public would never take to the package on account of the cost.

Buying nuclei in the South and shipping them to Colorado was recommended by some, and not viewed so highly by others—depending upon their experience with the plan. The elements leading to success with this plan are reputable dealers to purchase from, quick delivery at the time ordered, and a favorable season. The past season was a favorable one, and several in Colorado had pound packages of bees build up and make one super of comb honey. But increase in bees was rapid the past season, and one could have secured plenty of bees in the shape of swarms and nuclei from neighbors.

Perhaps the greatest attraction of the day was sweet cider. About four gallons of the juice were consumed by the 25 present. Those in the picture with their coats off consumed the most. The writer took the picture so that his face does not show, but he also had his coat off.

Lunch in half picnic and half cafeteria style was served, each person going to the dining-room and taking what he wanted and then going out on the porch or lawn to eat. A jolly time was had, and one of the men said it was the best picnic or bee-keepers' meeting that he had ever attended.

Over 4000 colonies of bees were represented at the meeting, and all present were members of the State Association but two, and they became members before going away. The ladies and children I did not count in this. There would have been a larger attendance had it not been honey-packing time.

Mr. Rauchfuss was expected, but business kept him away as it did others. A table with comb honey for his demonstration of the rules had been placed under the trees, and there were samples there that some would consider No. 1, and others were placed in the choice grade. The line between No. 2 and choice was also one difficult to agree upon.

The more meetings of this kind that I attend the more confirmed I am in the belief that our associations should arrange for more. Bee-men can get to these meetings who cannot go a greater distance to the State conventions.

A Cool Season

The West scarcely enjoyed a summer this year. Colorado had a June snow, and the snow fell frequently on the high mountain ranges. Then again in September, scarcely past the middle of the month snow fell throughout the whole State above 5000 feet elevation. The cold, rainy days of the summer kept the bees from doing as they otherwise would. The flow would have been fine with a longer and hotter season. The same conditions were present throughout the mountain region, Idaho, Utah, and Wyoming recording very similar experiences. But how the bees did swarm! It would be interesting to know if cool weather and swarming often go together. They did this year at any rate.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Divisible Brood-Chamber Hives

Numerous letters are received by the writer throughout the year relative to the merits of the divisible brood-chamber hives, of which we have been using hundreds for the last 15 years. At present our number of colonies is over 1500, the majority of which are in this hive. We prefer it to other styles after many years of trial, as we have been able to be more successful with it, due largely to the interchangeability of the various hive parts which allow manipulations that cannot be so well made with deeper frame hives. It permits of rapid expansion or contraction of the hive or brood-chamber and the super room gradually or as needed, besides giving numerous advantages that cannot be mentioned without going into detail.

But we wish to answer a few letters that have been received recently, of which the first is as follows:

> Pardon me, a stranger, for asking questions, but I expect to use your system quite extensively, and want some advice as to frames. I am using shallow Danzenbaker frames, but have never tried to extract from them, having raised only comb honey so far. Next year I am going in for extracted honey, and do not know whether to continue with the frame I have or get the shallow Hoffman for my new outfit.
>
> Your system has worked to perfection with me—much better than Mr. Doolittle's. That is all right for a few colonies. I used it last year and my bees started robbing so badly that one could hardly pass the apiary.
>
> The main surplus is from black gum and gallberry, both of which produce very white honey. Thanking you for any advice you may give as to extracting from shallow frames. F. L. HUGGINS.
>
> Wilmington, D. C.

In line with the above letter is the following letter from Monrovia, Calif.:

> I notice that you strongly advocate the divisible brood-chamber and shallow supers. I have been contemplating adopting that style, but have been hesitating until asking your advice. Most of our honey here is extracted. Would you recommend the shallow supers for extracted honey? It is also necessary for us to move our bees frequently, either by rail or in wagons. Would you consider divisible brood-chambers a drawback in that case? We are seriously menaced by foul brood, both American and European. Some say that if you have to deal with foul brood, leave divisible brood-chambers alone. What is your opinion? LEVY I. RAY.

Before answering the above it may be best to let the next two letters follow, and then answer all of them, since one answer, covering all these points, should be of interest to each enquirer:

> For several years we have read with great interest your contributions to the bee-journals. We wish to adopt your divisible brood-chamber-hive system in broadening our present apiary of 100 hives.
>
> For economy, and because of excessive freight rates to our distant sources of supplies, we contemplate having supers for our shallow brood-frames made. Our part of the South has cypress. Can you tell us its relative merits with other timber for constructing hives? We have experimented considerably with cement, but have not reached practical results with such hives.
>
> I have looked through Gleanings in Bee Culture, Bee-Keepers' Review, and American Bee Journal for the past several years, trying to find an article from you on hive construction, but cannot find such.
>
> Birmingham, Ala. (MRS.) E. J. BRYAN.

Another letter hails from California on the same subject:

> I have been watching your articles very closely. I am an experienced bee-keeper, and after selling out in California several years ago I have traveled to see many bee-keepers, and have worked several seasons with some of the most extensive bee-keepers. It is my intention to start in the bee-keeping business again this fall, and I wish to adopt a new style of hive. I thought first I would start with the "Jumbo" hive and use shallow supers, but I have been thinking of your system very strongly, and I am asking the following questions for your corrections:
>
> I will give you an idea of the kind of hive that I would like to adopt. A 10-frame hive, consisting of 6 shallow supers throughout for each colony, the frames to have the Canada spacing device, by having notches cut in the upper edge of the rabbets, and a nail under the end rests of the frames. The frames to be one width entirely, or the top-bar, bottom-bar and ends to be one width alike. Ten frames to be used in the brood-chambers and 8 in the supers—the hives to be marked so that the brood-chambers can be easily distinguished from the supers, on account of the difference in the spacing notches in the rabbets of the supers and the brood-chambers.
>
> The bottoms shall be with ⅝ cleats instead of the ⅞ as commonly used, and the Colorado telescope cover will be used, with a canvas or sack over the frames to keep the hive cool, and so the wind cannot blow them off.
>
> I would like to see you and your management of getting bees out of supers when extracting, and also how you fix up for bulk comb honey, and how you put it up for market.
>
> As no two men work alike, and as your system is somewhat different from the regular or standard, I would like to have all the

knowledge that you may be able to give me on the matter.

F. J. Severin.

Imperial, Calif.

Since we are using the shallow frames for extracted-honey production as we'l as for comb honey, and we have found them very satisfactory in our hands, there is no reason why others should not be as successful with them as we have been. We claim that we have some advantages over deeper frames, chief among them is the matter of being able to provide just as much room as is needed, which is quite an item with weak colonies or during a poor season.

Another important matter is, that we can use lighter weight foundation in these shallow frames, and when the supers are full they can be removed with much more rapidity, as the bees are easily cleared out of them with a little smoking and jarring. Handling the 10-frame shallow supers as a whole in all the various manipulations instead of frames only, is quite a saving of time and labor. This cannot be done so successfully with deep frames; first, because the deep 10-frame hive full would be too much of a load, at least to handle for any length of time; and, second, the bees could not be gotten out of them without considerable brushing of individual frames and irritation of the bees. One slice with the uncapping knife across the face of the shallow comb would uncap an entire side without digging over the surface of the deeper combs that are never so regular as a general rule. And while some persons argue that there are so many more frames to handle, the advantages that are gained by handling them far overbalance this. The Dadants are extensive users of the shallow extracting frames, and they are large extracted-honey producers.

In our experience, and after trying all kinds of frames and various methods of spacing, as well as unspaced frames, we have found the shallow Hoffman 5⅜ inches deep to suit us better than any other. We have found the closed-end type of frames unsuited to rapid manipulation, especially for extracted honey, where the frames should be easily removed. Besides, frames should be easily constructed so that they will fit anywhere, in supers or brood-chambers alike—there should not be any spacing arrangement that necessitates a super being used as such only, and a brood-chamber not being used as a super, or *vice versa*. There need not be any tin rabbets in the supers equipped with the shallow Hoffman frames, as we are using over 6000 shallow hives without them. That helps to cheapen the hive, and yet does not make the hive any worse off for the most practical uses.

It may be well to state that the Hoffman frames used by us, and many others, are made with ½-inch thick and ⅞-inch wide top-bar in lieu of the regular wide top-bar usually placed on the market. The wide ones act too much like a queen-excluder with us while the other gives freer communication between the several chambers of the hives—a great advantage for better results. This style is known pretty generally here in Texas as the "Scholl Shallow Frames," because the writer was the first to advocate it to any great extent. We received, several weeks ago, a letter from one supply dealer in San Antonio, saying: "We ordered from the —— Company 14,000 Scholl Style Frames the past season." For our own use we purchased a carload of the shallow supers with 30,000 such frames to equip the 3000 supers in the car.

We would not advise making the frames, as not very much can be saved by doing so, and the irregularity in fitting in the hives is a great detriment toward rapid manipulation, and a loss of time, and, consequently, of money. It is far better to expend a little more on machine-made goods that fit perfectly. Fortunately there are so many distributing houses of supplies now that the freight rates are not high. If only a few are needed it will be well enough to make them, and in that event cypress lumber could be used, as it is very good hive lumber.

Moving bees extensively every year, besides shipping them in carload lots, has taught us that the shallow frame hives will ship better than the deep kind. There is not so much swinging of the shallow frames, and they are never fastened below like deep frames must be. The strain is so much greater on the deeper combs than on the shallow ones. So there is no drawback, but a decided advantage. We have never fastened the frames at all, not even the top-bars, in all our moving.

There seems to be no good reason why the divisible brood-chamber hives should be left alone in sections where foul brood is prevalent any more than other frame hives. We may be mistaken about some of our views, however, since we have not had any experience with brood diseases in our own apiaries. But it seems to us that there would be a decided advantage in this respect, since the various manipulations of the bees in the treatment of foul brood or other contagious diseases could be done so much more rapidly and easily.

In the case of freeing the shallow stories of bees, shaking the bees into other or new hives, getting the bees out of them quickly and removing the supers for protection in the honey house, there seems to be quite an advantage, since robbing, one of the worst evils in treating contagious diseases, could be prevented to a far greater extent.

But there are many things that could be said about this kind of hive and it would take up too much room to attempt more. The best thing to do is to try a few side by side with others, exactly like we did years ago. If they suit you, adopt more of them after awhile, but go slow about it. If they do not suit you the investment put into a few will not be a great loss, if a loss at all, since such things can always be disposed of again.

One thing must be remembered; when divisible brood-chamber hives are adopted, the methods that ought to be used with them should also be adopted. It is of no use to try to handle the shallow frames like deep ones when they should be handled by the super full at all times possible. The very first thing then is to learn to handle supers instead of frames, and this once learned, it is possible to manipulate the colonies in such a way at various times that the best results can be obtained with a minimum of labor and a maximum of profit.

San Antonio Convention.

The San Antonio National Bee-Keepers' Convention

A goodly number of the American Bee Journal readers will remember the bee-keepers' convention held in San Antonio several years ago. The writer's memory was awakened back to that time by the accompanying snapshot taken one evening, as the crowd was marching out from the Assembly Hall after adjournment of one of the meetings. If we are not mistaken, it was when the guests were on their way to the famous Mexican restaurant, well known to San Antonio visitors, where the so much talked-about Mexican banquet was given to the visiting bee-keepers.

The one thing that was of the most interest when this picture was discovered in my desk, is the fact of the central figure, in the front group, being no less a personage than our present Editor of the "Old Reliable." I still remember that the persons on the right are Mr. and Mrs. R. A. Holekamp, of St. Louis, but do not recall the person's name, walking on the left side of our Editor. Just behind this group may be seen Jas. A. Stone, Secretary of the Illinois State Bee-Keepers' Association, and behind him that old veteran, Dr. Bohrer.

We like old reminders, as pictures of such a nature are. It brings back to our memories the nice time that we enjoyed while the "tender-feet" northern bee-keepers were with us in this southern clime. It is a pity that it is not possible to have large gatherings of bee-keepers of the United States, and the whole country, meet at least once a year to exchange greetings and discuss the more earnest and important matters pertaining to the grand pursuit that we are embarked in. There seems to be more of a clamor for all that means business, business that means more money, more money that makes us more forgetful about the real pleasures of life that we might enjoy. Is it not true that we have lost sight of those good old-time bee-keepers' meetings which gave much interest and great anticipation? Now we have business associations that take care of our real business interests, with their meetings crowded for time, every minute of which is too valuable to allow pleasure to be mixed up with it.

Such are the tides of Time, and we must keep up with them, of course. But, nevertheless, there remains that feeling in some of us, a kind of hungering desire to attend some more of those old-time bee-keepers' conventions. That they had the effect of bringing the bee-keepers closer together in a friendly spirit cannot be denied. And that the present tendency of involving everything in a business way has its effect toward bringing about a change in the sociability of the bee-keepers of the country seems to be a fact. But this is in strict conformity with the old saying, "Business before pleasure."

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Different Conditions at Similarly Situated Yards

In October American Bee Journal, mention was made of my intended visit to the east apiary, some 200 miles from my home. I left home, as per arrangements, Sept. 9, arriving there in the evening of the same day. At our home apiaries, owing to so much wet weather, little honey had been stored, and what little had come in was put up in the supers, as the brood-nests were full of brood at the time of the buckwheat flow. Almost continuous rains all through the last half of August prevented honey being gathered during most of the buckwheat bloom.

This, of course, meant light brood-nests the first of September, with lots of feeding to do for winter. I expected a like condition at the east yard, as the weather had been similar there to what we had at home. For some reason still unexplainable to me, conditions were altogether different, for while there was no great amount in the supers, the brood-nests were jammed with honey. At home all our hives have the combs running the orthodox way—facing the entrance, while at the east yard in question the combs run crosswise. The hives are of about the same capacity at both places, but whether the different style of frames has anything to do with the matter I can merely conjecture.

No feeding had to be done, and I was let out of a lot of work and spared the expense of a sugar bill. In keeping bees so far from home, a person dares take no half way measures in the feeding question, and I am as sure that all have enough as it is possible to be *sure* in a question of this kind. I left the apiary Sept. 14, and do not expect to see the bees again until some time next May. Of course, I have a trusty man who lives in the neighborhood, and who will carry the bees into the caves in November and take them out again in the spring.

Stingless Bees are the Latest

"The stingless bee is the next product of a man's ingenuity. Mr. Burrows, an apiarist, of the town of Loughton, in Essex, after two years of experiments, has obtained a species of bee which can be handled by a child in perfect safety. He mated the Cyprian drones and the Italian queens, the result being the production of harmless insects which, however, are splendid workers. It is claimed that they are less liable to disease than the ordinary honey-gatherer.

"It appears that the new product has a sting, but it is useless as a weapon of offence. Yet they die when they lose it."—*Mail and Empire.*

This item has been going the rounds of the Ontario press lately, the large city dailies first publishing it, and the smaller local papers copying it generally throughout the country. That it has been read with interest by many is evident from the comments and questions I have heard about the matter, and some have taken the trouble to cut out clippings and mail them to me. It is as reliable as many other bee-yarns that imaginative reporters serve up to their readers as choice copy—generally these items contain about 5 percent truth and the balance fiction or imagination. While I get the British Bee Journal regularly, I have seen no stir about these harmless (?) bees, and when we analyze the breeding referred to in the clipping, one would hardly expect very quiet stock. On the contrary, I would guess the Cyprian drones crossed with Italian queens would give bees that would sting quickly and often. At least that is the way it works out with Carniolans and blacks. I always find that a black queen mated to a Carniolan drone gives bees that inherit the quiet traits of the father, while black drones mated with Carniolan queens produce very cross, irritable bees. In the case under discussion, the bees have stings, but they are "useless for defense." Who is next in line to tell the most improbable bee-story?

[The same clipping from the Cleveland News was received from J. C. Mosgrove, who comments as follows:—EDITOR.]

"I have seen a great many Italian queens mated to Cyprian drones, and they were a long way from being stingless; in fact, I never saw anything more vicious unless it was pure Cyprians."

Japanese Progress

A look at that cover illustration of the October American Bee Journal, showing the Japanese bee-keepers in convention assembled, impresses one with the fact that this wonderful little country is making rapid strides in other matters as well as in military affairs. A few days ago I received a copy of the Japanese Bee Journal, and although I could not read any of the contents, I marveled at the wonderful hieroglyphics that have to go into type to print a paper in the Japanese language. Certainly any nation that can acquire an education with such difficult letters, or rather characters, to master, is in itself proof of the ability of the people of the Orient. With our modern mail facilities, to say nothing of telegraphy, etc., the world is not so large after all. A short time ago I received, inside of a week, one letter from Finland, one from Austria, one from Japan, and one from New Zealand—all arriving in good condition. "Truly, we are living in a wonderful age."

The Ontario Convention

The following is a rough draft of the program of the Ontario convention, which will be held in Toronto Nov. 13, 14 and 15. Mr. Pettit has sent the same to me, intimating that there may be some changes made yet, but the general outline will show the trend of things apiculturally as they are today in Ontario. A hearty invitation is extended, for all who can, to meet with us and have a pleasant and profitable time. To those who have never visited Toronto, the "Queen City" of Canada, the trip would be "worth while," even if the convention were not being held as an added attraction.

While I have no information as yet, as to the railway rates, I presume that, as in past years, there will be a single fare from all points in Ontario. Hotel accommodation is good, and can easily be arranged for on arrival. The writer, in common with a host of others, is looking forward with pleasure to again meeting many old friends, and also to making the acquaintance of many who have never attended the convention.

Especially are we looking to see many from "over the line," as bee-keepers know no particular country in so far as good fellowship and fraternalism is concerned:

PROGRAM

Wednesday 2 p.m.—Minutes of the previous meeting—P. W. Hodgetts, secretary, of Toronto.

President's Address—Dennis Nolan, of Newton Robinson, Ont.

Reply—Vice-President.

Discussion will be opened by Miss E. Robson.

"Improved Methods of Selling Honey"—E. B. Tyrrell, Detroit, Mich.

Question-Box—F. W. Crouse, Guelph, Ont.

Wednesday Evening—Open meeting.

Thursday Morning — "Foul Brood Situation in Ontario"—Morley Pettit.

"Management of Out-Apiaries"—(*a*) "With a complete outfit at each yard, using auto or horse for transportation," by H. G. Sibbald. (*b*) "Management at long range," by J. L. Byer. (*c*) "Moving outfit on motor truck," by Enos Farr. (*d*) "From one center, with stationary machinery, and motor-truck to haul supers home," by F. J. Miller.

Thursday Afternoon — "Preparing Bees for Winter"—J. F. Dunn.

"Winter and Spring Management"—R. E. Harkness.

Question-Box—Jno. Newton.

Address by Hon. J. S. Duff, Minister of Agriculture.

Election of officers and reports.

Thursday Evening—"Bees, Fruit and Poultry"—J. W. Clark.

Discussion by R. G. Houghton.

"The District Representative and How He can Help the Bee-Keeper"—A. D. McIntosh, B. S. A.

Friday Morning — "Experiences of the Season"—Miss Margaret Scott.

"Bee Breeding"—F. W. L. Sladen, Assistant of Apiculture, Ottawa.

Unfinished business.

(Nothing preventing, the Editor of the American Bee Journal expects to attend this convention.)

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

A Great Trip and Honey Crop of 125,000 Pounds

On the morning of Oct. 7, I boarded an early train for a trip to my apiaries 170 miles below here, on the famous Suwanee river, in Florida. At sundown of the same day I was at my packing-house near the middle of Columbia county, and found Johnny Calhoun, who has charge of my bees there, and his helper, very busy packing honey. Next morning we started on our trip visiting the 8 apiaries scattered around over the country 3 to 6 miles out, consisting of 450 colonies, of which Mr. Calhoun has charge.

I found that he had been a prudent bee-keeper, and all of his work had been satisfactory. He had harvested a a great crop of honey. After staying there two days I went to the other packing-house some 20 miles away, on the line of Columbia and Suwanee counties. There I found Mr. Landrum, who has charge of 8 apiaries scattered through the country, consisting of about 300 colonies, very busy with *his* crop of honey, and greatly encouraged and enthusiastic over bee-keeping, asking me to furnish him with more bees the coming season, which I promised to do. I met with everything in the way of encouragement here, and after staying two days I started for another packing-house about the middle of Suwanee county, and 10 miles from the last packing-house. I found Mr. Reeves, who has charge of 8 apiaries scattered around in that vicinity, consisting of 600 colonies, and his helper very busy packing honey, but owing to some "set backs" he had not made the progress in the honey harvest that the others had, but taking all things under consideration he had done very well.

After a day's stay here looking over the business, I departed for home, and upon arriving I found they were winding up our packing here. Then I braced up and took courage, and my enthusiasm mounted almost to the sky, because I had harvested, all told, over 125,000 pounds of surplus honey this season, and without feeding the bees any. In good locations this amount of honey could have been harvested with half the number of colonies, but in such poor locations as I have, it is indeed gratifying for me to know that my harvest was so great. Some of my "air castles" are beginning to materialize, and I feel as if I had just started in bee-keeping, for surely I am not at a stopping point.

Wants an Apiary in the South

DEAR MR. WILDER:—I have a trade for bees and honey, and I would like to have an apiary in the South. I want it near the coast on account of the low freight rates. I am familiar with the bee-business, and can therefore understand easily what you write.

1. What are your sources of honey?
2. Where is the best place to locate?
3. What is the price of bees there?
4. What is your average crop per colony?
5. How many colonies can be kept in one locality?
6. Could I divide and make two good colonies from one by the time the main honey-flow comes?
7. Do you think I could find 200 colonies, in some section there, that I could buy?

West Newton, Mass. H. P. DYAR.

1. Our sources of honey are too numerous to give a complete list at this time However, titi, poplar, gallberry, tupelo gum, cotton and partridge-pea are good honey-plants in the territory that I shall refer you to.

2. The territory along the line of Georgia and Florida, say 70 miles above and below, will be found to be our best honey-producing section, and most any bee-keeper can find just such a location as he wants in that section but it would be advisable to look it over well before settling.

3. From 50 cents to $8.00 per colony, depending upon their condition, hives they are in, etc.

4. From 30 to 60 pounds of comb honey, and from 40 to 80 pounds of extracted, depending upon seasons, which makes the average about 40 and 60 pounds for successive seasons.

5. From 50 to 300 colonies, depending of course upon the quantity and quality of the honey-plants in that locality. In most localities 60 or 70 colonies would be enough.

6. Yes, in locations where there is spring titi, which begins yielding the latter part of February. In other localities this could not be done.

7. Yes, by gathering them up through the country.

Looking Towards Dixie

DEAR MR. WILDER:—Would you kindly tell me how many colonies you have; whether you run for comb or extracted honey; what is your success in wintering, and how long is the season there?

A number of years ago I was in the bee-business in Ohio, but dropped out of the game; now I am taking it up again, and am looking towards the southland.

Boyne Falls, Mich. W. A. DAVOLL.

I cannot tell how many colonies of bees I have, for it has been a number of years since I knew exactly, and I don't even know how many apiaries I have, but I have more than 35, and more than 2000 colonies of bees.

We have no winter problems. At the close of the season, or just at the approach of cold weather, we see that all queenless colonies are united. In some cases we equalize stores. Our season begins the first of March and lasts until November.

We would be glad to have you visit Dixie and look around, and if you can get suited remain with us.

Apiary Work for November

The honey-flow has been very good in nearly all sections of the South, even up to the close of the season, and it is hardly necessary to say anything about feeding, but it might be necessary to equalize stores some in order that all colonies may be supplied. This is such an easy and simple job that most bee-keepers know how to do it.

Very weak and queenless colonies should be united at the last round of apiary work, and a good and simple way to do this is by Dr. C. C. Miller's plan; that of placing a single sheet of newspaper over the stronger colony, and setting the weaker colony on it. The bees will do the rest by tearing away the paper between the two. I tried this plan last season. It gave good results. It is a poor plan to leave weak colonies scattered through the apiary, for they will dwindle down by next spring, and the robbers will clean them out and cause much excitement among the bees.

Nothing but water-proof covers should be left on the hives, and they must fit down well. The top-bars of the brood-frames should be cleared of bur and brace combs, and as much of the propolis removed as possible. Hives which have been elevated by means of extra strips should be let down on their regular bottoms, using the side with the shallower entrance. Covers made of sap lumber should by all means be painted, for a lot of moisture will be sure to penetrate.

CONTRIBUTED ARTICLES~

Advertising Honey Through the Mails

BY G. M. DOOLITTLE.

"If I am right, Mr. Doolittle sent samples of extracted honey through the mails a long time ago, and in this way built up quite a trade. Now that extracted honey is slow of sale in the markets, my thoughts have been turned in the direction of advertising and selling honey in a mail order way, and I therefore ask you to give us something of what you did along this line before you turned your attention much to comb-honey production. As I am a reader of the American Bee Journal, will you please tell us of this matter through the columns of that paper?"

Yes, at one time I did quite a business in selling honey through samples sent in the mails. I would put an attractive advertisement in a paper having a large circulation, stating that I would send a sample of my honey for 10 cents, and allow the 10 cents to apply on the first purchase amounting to $1.00 or more. By way of preparation for doing this, I made the winter before, from section material, little boxes holding ¼ of a pound of honey, so that this, together with the box and wrapping, would weigh a little less than 5 ounces, so that 5 cents would cover the postage on the same.

These boxes were waxed on the inside, so they could not leak, and then stored away in a dust-proof box, waiting until next September or October when the nice, thick clover or basswood honey would begin to candy. As soon as signs of candying were discovered, the whole mass was stirred, which hastened the candying, and gave the honey a more even and finer grain than if no stirring was done.

At the time of making these little boxes for samples by mail, I made other boxes of ¾-inch stuff, that would hold 2½, 3 and 10 pounds each, waxing these the same as the others. When the honey had become as thick as it would conveniently run, all of these boxes were "run" full, set away and the honey allowed to harden, say up to about Dec. 1. A printed slip was then folded and put in the top of each box, briefly describing extracted honey (many at that time not knowing just what extracted honey was), and telling how, through a proper degree of heat, this hardened, granulated honey could be brought back to liquid again; then the covers were nailed on and I was ready to proceed.

Nice honey of this kind was so attractive to me, that I argued that thousands of people would be glad and happy to buy nice, ripe, thick, rich clover and basswood honey, if they only knew where they could get it; could feel sure that they were getting it direct from the producer, and thus know that it was pure. I also believed that the man in the country, right in and by his own apiary, and advertising what he had for sale, as honey from "Linden Grove," or "Clover Meadow Apiary," in the beautiful scenic regions of central New York, had a better chance of building up a trade than did the man who lived in a large city and bought his honey at wholesale in that city market.

As extracted honey in those days brought from 18 to 22 cents per pound, I put the price of the 2½ pound package at 50 cents; the 5-pound package at $1.00, and the 10-pound package at $2.00, delivered at the railroad station. Or, if so desired, I would mail the 2½-pound package, if 90 cents accompanied the order. Quite a lot was sold in this way, and with only the once advertising.

While lying awake one night a new scheme occurred to me, which was to mail one of the ¼-pound packages to the postmaster in some place along the Atlantic coast, or some interior city where there was so little forage for bees that few if any were kept, using for this work places having from 20,000 to 50,000 population, such places as were not liable to have large shipments of honey sent to them. The next morning found me mailing samples to three different places, requesting that the postmaster, or one of his deputies, after sampling the honey, call the attention of his friends, or those coming after their mail, to the matter, and if sales could be made amounting to $5.00, I would include a 2½-pound package free for his or the deputies' trouble, or if a sale of $10 was made, a 5-pound package would be sent free. In this way several could "form a club," so that the freight on the shipment would be very much less to each one.

I believed this to be a generous offer, but as it was to be in the way of an advertisement, I thought it would pay well, as it would be likely to secure permanent customers. These, through being pleased, would call the attention of their friends to the matter, and in this way a trade would be built up that would expand to large proportions.

This took all the extracted honey I could spare that year, and undoubtedly would have led to a large business had not two things happened. The first was, that my father became helpless, so that I had to devote much of my time in lifting him and caring for him during the remaining 5 years that he lived, which called for retrenchment rather than expansion in the bee-business. And the other thing was, that I was offered for all the comb honey I could produce one-half more than could be obtained for the extracted, even did I carry out this advertising by mail plan. And the comb-honey offer took *all* of my crop without any effort on my part further than to deliver it to my nearest city and get the cash for it all in one lump.

Then there was another thing which changed the whole outlook of the extracted honey matter, coming on soon after this; the big dealers in extracted honey began to mix glucose with it, so that they might reap a greater profit. From this the cry of "adulterated honey" was rampant in the country, and the price of extracted honey was soon cut nearly in half. For all these reasons I felt justified in keeping on with the comb-honey part of our pursuit, and have produced but very little extracted honey during the last quarter of a century.

During that quarter century many changes have taken place, and mail-order houses have sprung up for almost all kinds of merchandise. If we could only have such "parcels post" in this country as they have "across the ocean," extracted honey could be sent to any place in the United States, as well as all other goods of different kinds.

Of course, comb honey will never be handled by mail very much on account of the liability of breakage; but extracted honey can be sent in jacketed tin cans if it is not considered best to send it in boxes. However, when put up in boxes, as has been given above, and allowed to candy solid in these boxes there is nothing nicer, to my way of thinking. Again, I think a better rate of freight could be obtained with these boxes should they once come into fashion.

Borodino, N. Y.

Blew Out the Safety Valve

BY EDWARD F. BIGELOW.

We were running at high pressure, nearing the end of the season's contract, when the boiler exploded and the pieces landed in the branches of an oak tree. It was about the second week in September, when the honey-bees of a particularly good colony were working at high pressure. The weather was warm and extremely favorable, and in almost every direction were acres of golden-rod just coming into perfect bloom. I thought to make an experiment, and to intensify the work of the bees by holding them down to the capacity of a 10-frame hive with a double super on it.

With most colonies such capacity would have been great enough, but this had been an unusually large colony all summer, one that I think would have done justice to 30 frames. But I had been reading so much about keeping more bees and working more with your bees, that I decided to accept the advice and "make the bees do more work." They were responding with extraordinary diligence. A cloud of bees was going back and forth from that hive. They swarmed around the entrance, and at times they covered the front. When the cover board of the upper super was lifted, there was a sight that would delight the eyes of any bee-keeper. It was a boiling, seething, roaring torrent of bees. The sections were nearly full, and every bee was doing its best to complete the job.

Some practical bee-keeper will of course say, "Why, man, don't you know that was not good bee-keeping; you should have added two or three supers; you should have raised them up and given them a 10-frame hive?" Admit it, of course I should, if honey were the only point of view, but in this case I wanted to experiment and see what would happen. I wanted to make a record of the fewest possible days in which the lower super, recently put on, could be filled. I was literally screwing down the safety valve to increase the pressure, and what sometimes happens with other safety valves, after such rash treatment, happened here. The thing burst.

It was so late in the year that I had never for a moment contemplated the swarming. The last time I examined the brood-chamber there were no signs of queen-cells. But the strain was too great. Along about 9 o'clock of a very warm day, when a strong aroma of the golden-rod nectar extended for many rods in every direction from the apiary, suddenly the whole thing boiled over, burst, or whatever figure of speech you see fit to apply to it.

In brief, a cloud of bees burst out of that hive. The air of the heavens was full of lines darting, interlacing, weaving in every direction. The whole mass moved off to the northward and alighted in an oak tree. Without any exaggeration there seemed to be at least a bushel basket full of bees. By the help of a ladder I climbed up with saw in hand, cut off the limb, and with difficulty lugged it down. It was so heavy that it was extremely difficult to handle without jostling the swarm to the ground. From the very weight of the bees some of the lower ends did occasionally fall off, and I had to wait for them to cluster again. Here was an opportunity. Secretary and stenographer from the office came out first to admire and then to assist. The branch was clamped firmly to an upright support, and several photographic studies made of it.

"By the Help of a Ladder I Climbed Up With Saw In Hand, Cut Off the Limb, and With Difficulty Lugged it Down."

Then we took it homeward to the apiary, the young lady carrying it on her shoulder—perhaps not for a long distance, but far enough to supply a good photograph. Gently the colony was laid on the ground in front of a light, 5-frame swarming hive. We did not urge nor shake it off, as is often the custom with swarming bees, but laid the whole thing so carefully on the sheet that not a bee was disturbed. This was done to see whether they would appreciate a new home, the mouth of which was some 18 inches away. It was almost grotesque to see the manner in which some of those bees turned and gazed in. Don't O bee-keeper, think I am taking poetic license, nor speaking figuratively when I say that the bees changed their expression of discomfort to one of joy when they beheld the mouth of that home so near. It must have been joy, because it caused delight, even laughter, when the spectators saw how suddenly they stampeded toward the entrance to that hive. Into it they went by the pint, and the quart, and the peck, but the trouble was that the interior of the hive would not hold much more than a peck and a half, while there was nearly a bushel of bees to be accommodated. They covered the front of the hive, and remained that night an inch and a half deep over the front, sides and top. The next day I changed to a full 10-frame hive, every frame being nearly covered.

Who can surpass that for a large swarm so late in the year? Query: If, according to the old nursery rhyme, a swarm of bees even so late as July is "not worth a fly," can anybody remember what they are worth in September?

Arcadia, Sound Beach, Conn.

The Conditions in Southern California

BY W. K. MORRISON.

Bee-keeping in this part of the country is looking up. This is on account of the rise in the price of honey. This is not so high—about 7 cents—but it is a good deal better than 4½. I am very strongly convinced that the price could be raised considerably higher, but many bee-keepers would have to mend their ways.

There are many here who must realize on their honey crop just as soon as it is produced. They rush to town, get the 5 gallon cans, and sell at once. These men depress prices. To stop this practice is the problem, but it can be stopped.

Southern California is fast settling up with a good class of people. Los Angeles is becoming a great masterful city of splendid homes and factories. No city in this country is growing so fast, and San Diego follows suit. The result is that there is now a fine local market for honey. Curiously enough many bee-keepers ignore the existence of this market. Their eyes are fixed on some far-away country. They fail to see the home market. From my own observation bulk-comb honey, put up Texas fashion, would solve the problem. I have talked to some about this, and they nearly all disagree with me. They seem to think that such methods might answer very well in "wild and woolly Texas," but not for graceful, æsthetic California. I differ with them, and know whereof I speak. It is my opinion that California can consume all its own honey.

Glucose is imported into this State by the train load. It is stacked up in all the grocery stores in large quantities, and yet honey is the principal article of export from San Diego. It is sent to the poor, poverty-struck countries of England, Germany and Holland. Rich and opulent California uses glucose for the children's lunch. To a large extent the bee-keepers are to blame for this state of affairs. They put up their honey in a way not appreciated by the consumers. The common package for honey here is the Ball-Mason jar, and, in my opinion, it is a poor package. It is too fragile and too expensive. Paper jars or tin cans (2 pounds) would be far better. The 5-gallon can simply throws the honey business into the hands of the commission men, jobbers and wholesalers.

I have traveled all over Texas, and it strikes me the people are very little, if any, different from the people here. Life and property are fully as safe as here, and in some cases the laws are superior—the Homestead law for example. For 30 years the Southern Pacific and Santa Fe railroads have run this State—with an iron hand. Lately it has reformed, and laws copied from Oklahoma and Texas have been enacted. From 1890 to 1900 California attracted no immigration. From 1900 to 1910 it did better, but from 1910 to 1920 promises to furnish a phenomenal record. Ere long Los Angeles promises to overtake all the cities of this country except three. Not only so, but little towns are springing up everywhere, promising a fine local market—if bee-keepers will cater to it.

One might think the opportunities have all been appropriated. On the contrary, there are all sorts of openings for capable bee-men. Plenty of apiaries may be had that are "run down at the heel," and need care. It is no longer necessary to live a hermit life in the mountains, with the coyotes for company at Sunday dinner. You may live in town, keep an "auto," and look after your bees 20 miles away with much ease.

The right way, in my opinion, is to have an acre lot near the post-office, church and school, build a tent house and live like a king. A tent house costing $250 is better to live in than a $10,000 bungalow. The chief health officer of Chicago, in a speech here last winter, said he did not see what people wanted with houses, tents were so much better.

With a good garden, a cow and a flock of chickens, you are independent of grocers and butchers. All *winter* long you may have fruits and vegetables from your own garden. By doing this you are not in such a hurry to sell your honey "at any old price."

The line of fruits and vegetables is long, and it is intensely interesting to watch the different plants develop. We have only had our place 18 months, but the results have been very satisfactory. We have had a little crop of peaches from trees that came by mail. We will probably have strawberries, blackberries, raspberries and melons for Christmas, all from our own lot. I find that in many spots a considerable number of tropical fruits can be grown with success, notably avocados, cherimoyers, zapotes, jujubes, bananas, plantains, mangoes, etc. Among vegetables you may have cassava, chayotes, rosella, couve-tronchuda, sea-kale, and a lot of others.

There is no necessity of any one punishing himself and injuring his health by trying to get along on two meals a day The expense of living is *less* than it is *back East*. If you have no money, come anyway, work is plentiful, and homes can be bought on "tick." Failing in this you can go south of here and get deer, bear, prong-horn antelope, mountain sheep, etc., in abundance, and game birds by the million.

Do not think we are "out of the world" here. We are not. I heard every shot at the first battle of Tia Juana, Mexico, and saw the red flag of the Socialists flying over the Custom House. After the second battle Gen. Orozco and his men passed our door prisoners of war. Later Madame Sarah Bernhardt, "the Divine Sarah," passed by on her way to Coronado Beach. Emma Goldman gave us a lecture on dramatic art, and Joseph Fels, the robber philanthropist, gave us a call. The Pacific fleet throws its search light quite often on our house, and the concussion of its 10-inch guns shakes our windows and causes us to lose sleep at times. For $2.00 one may go to Ensenada, Lower California, and see one of the grandest bee-countries on earth yet unoccupied, or you can stray down as far as the burning beach of Mazatlan, where strawberries and cocoanuts grow side by side. Or, you may visit the famous city of Acapulco and dream of Spanish galleons loaded to the gunwale with silver from the mines of Potosi.

We have good churches and better schools than "back East." What more does one want?

Chula Vista, Calif.

Troppman's Devices for the Apiary

BY GEORGE W. YORK.

Mr. George Troppman is one of the few bee-keepers in this most northern (Bonner) county of Idaho. He is an ingenious mechanic, and is ever contriving short cuts in bee-keeping. He has an apiary of some 20 colonies, and works for both comb and extracted honey.

A HIVE-NUMBERING PLAN.

A picture of Mr. Troppman's apiary is shown herewith. It was taken to illustrate his method of numbering hives, but for some reason it failed to indicate it. Perhaps it can be explained so as to be fairly intelligible.

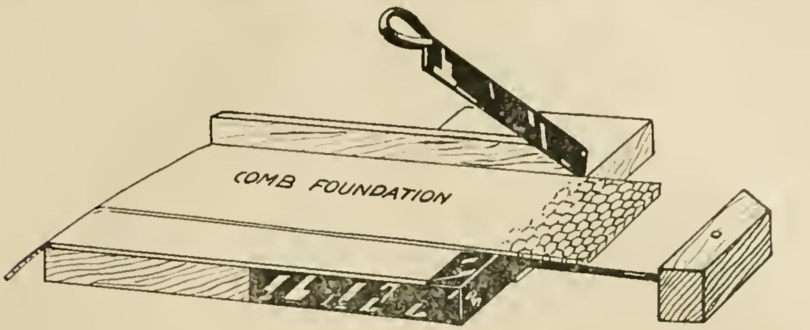
He takes a piece of 4¼x4¼ section for each hive, and puts the figure or figures on it as large and plain as possible. The piece is then slipped back of a small spring that is tacked on a rear vertical edge of the hive. On the other side of the piece of section may be written any records desired concerning that particular colony.

I believe Mr. Doolittle also uses pieces of sections for the record part, and lays them under the hive-covers. But on the outside of the hive, as Mr. Troppman has them, they serve a double purpose. The figures, being large and black, can be seen some distance away.

A SIMPLE FOUNDATION CUTTER.

The illustration herewith gives a good idea of Mr. Troppman's way of cutting comb foundation for sections.

MR. GEO. TROPPMAN, OF IDAHO, AND A PART OF HIS APIARY.



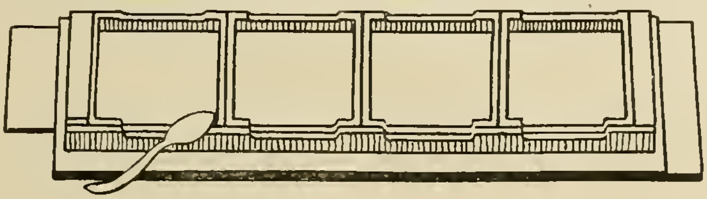
Troppman's Foundation Cutter.

A photographer's long knife, used for trimming prints, is fastened to the end of a board about 18 inches long, as indicated. A narrow strip projects just above the main board, against which to lay the foundation in order to hold it firm and straight. Then there is a sliding gauge that can easily be set for any width or length desired. The picture shows the gauge extended beyond the foundation to be cut, so as to make it plainer. Of course, when in operation the foundation comes against the end-block of the sliding gauge. The knife, being held very firmly, makes a clean and straight cut through the foundation. The cutter-board can be screwed to a table if desired.

FASTENING FOUNDATION IN SECTIONS.

Where one does not have a machine made specially for the purpose, such as the Daisy foundation fastener, the plan used by Mr. Troppman is very good, though it may not be new to many.

He fastens to a board 4 blocks of wood just a trifle smaller than the inside of a folded section, and far enough apart so that when the sections are put in a section-holder they can be laid over the blocks. The blocks are just half as thick as the sections are wide or deep when lying on their sides. He then slightly slants the board holding the sections toward the lower side, and with a teaspoon pours a little melted beeswax along the edge of the foundation for each section, which fastens it securely to the section.



Fastening Foundation in Sections.

Any size piece of foundation can be used from a small starter to a full sheet. Of course, another piece can be fastened at the bottom of the section if bottom starters are desired. Or, if a full sheet, it can be fastened at both top and bottom, and also on the sides if cut so as to fill the section completely.

Here is a clipping I took today from the Daily Spokane Spokesman Review. Oh, yes, Idaho produces some honey! But wait until Bonner county is heard from in a few years!

I believe all the honey referred to in the enclosed clipping was produced in irrigated districts. Irrigation is not necessary up here in Bonner county.

BIG PRICE FOR IDAHO HONEY—ENTIRE YIELD OF THREE DISTRICTS IS SOLD.

Boise, Idaho, Aug. 20.—All the honey of the Boise, Payette and Weiser valleys was sold through a deal consummated here today to the Gregory Fruit Company of Colton, Calif., represented by R. R. Sutherland. It is estimated that the crop will amount to no less than 20 cars, and the final delivery is expected to be made by Oct. 1. The price paid was $2.50 and $2.75 a case, which is considered a very good price.

The Bee-Keepers' Association of eastern Oregon and western Idaho was largely instrumental in making the favorable terms which were received. It is said that the California honey crop has been almost an entire failure because of the drouth.

Sandpoint, Idaho.

◆

Shipping Carniolans from their Native Land to Finland

BY PAUL MICKWITZ.

I promised, last spring, that I would write a short description of my trip to Carniola, and I feel obliged to do so now, as most of my honey, which those imported Carniolans stored, is ready for market.

June 1, I started for Carniola to take back home with me 150 nuclei of bees. Only 75 of these were for myself, the rest were ordered by 27 different customers. The nuclei weighed 4 pounds net, and were shipped in boxes including 5 empty combs for the bees to stay on. "Naked swarms," *i. e.*, such as are shipped without any combs, have not proven to go as well such long distances as from Carniola to Finland.

Every nucleus was put into a wooden box provided with ventilation on sides and bottom. Inside, under the top-board, was put a bag containing the food, a stiff mixture of honey and sugar—2 pounds of food for about 10 days. This amount was a little too small, so I was obliged to feed sugar at the end of this period. The feeding was done by putting lump sugar through a hole in the board into the bag. The bees sucked the sugar through the bag if they got plenty of water. This was sprinkled every day against the wire-netting, or whenever the bees seemed restless.

The 150 nuclei were all loaded into one big car, which went directly to Stettin. At this point they were loaded on the Finnish steamer for Helsingfors. I spent about 4 days in the car with my "pets," but did not feel very easy about them until they arrived in Stettin. The weather was very warm, and when bees are restless from heat on a journey they are troublesome to the owner. But water, water, nothing else could put them in shape again!

I had a big crowd of people at every station. They asked me the same questions every time: "How much did they cost?" "How much honey do they gather?" "Do they bite?" etc. A graphophone could have been used with much comfort.

All nuclei were in good condition in Stettin, but on board the "Wellamo" they were bothered by an intense heat. They could not be watered before we landed at Helsingfors, where they were distributed. So far, I have not heard any serious complaints from my customers.

Of my own nuclei I reduced 50 to 25 by doubling, and the rest were left single. The double colonies have given me about 1000 pounds of extracted clover and basswood honey. The single colonies have developed so that they will only winter well. The season has been very poor in this part of Finland, as we have had no rain for six weeks.

Salo, Finland.

◆

Observations of a Progressive Bee-Keeper

BY FREDERICK GRIFFITH.

By the frontispiece illustration, and on page 243 of the August American Bee Journal, "Pioneer" Dr. Miller expatiates upon a simple but very valuable method of queen-rearing, for the bee-keeper who wishes to improve his stock and rear his own queens. Every amateur bee-keeper ought to carefully read and digest every word of Dr. Miller's article, as well as the very valuable essay of A. C. Allen, on "How to Secure a Good Crop of Honey."

Those articles are replete with good suggestions and ideas for the beginner as well as for a great many experienced bee-keepers of this country. Those two articles, alone, are worth many times over a year's subscription to the American Bee Journal, and are well worth framing and hanging in a conspicuous place in any man's apiary.

While Dr. Miller's article on queen-rearing does not indicate when one should requeen an apiary, yet the reader gathers from Mr. Allen's meaty article that colonies should go into winter quarters headed with a young and prolific queen. Hence, about the end of the honey season is evidently the proper time to follow out Dr. Miller's plan.

Mr. Allen brings out an important idea which is under-estimated by a great many bee-keepers—especially beginners—and which cannot be too strongly emphasized, "In union there is strength." It is the rousing colonies that produce the honey. And what makes rousing colonies? Prolific queens! Queens which fill, with brood and eggs, the whole length and breadth of the brood-frames. When you find the brood-cells scattered—with empties between—the quicker you get rid of that queen the better. One of the hardest things for a new bee-keeper to do is to part with his queens, even if they are old and worthless. But an old, worn-out queen is a burden, and you might as well make up your mind to drop her. When a new queen comes along, prolific, clean limbed, filling the brood-cells solidly, then you see the uselessness of keeping an old queen "for the good she has done."

Every experienced bee-keeper knows how difficult the task is of getting all the old colonies in strong enough condition to enter the supers at the beginning of the clover bloom. It is safe to assume that any one who follows Mr. Allen's suggestions will have 100 percent of his colonies strong and well prepared to gather the nectar "that will surely come stalking across the plains some few days each season," as Mr. Allen poetically puts it.

Any system that will give us rousing colonies, and the strongest force of workers right at the beginning of the harvest, cannot fail to give us full supers. Twenty-five strong colonies will store more surplus honey than a hundred weaklings; therefore, all colonies that are not in a condition to work in the supers at the beginning of the honey-flow should be united with others.

There is no excuse for any bee-keeper to allow any part of his apiary to remain unproductive by neglecting to attend to a few easy, simple details that will secure large crops of surplus honey. Any one can easily acquire the necessary skill who has the energy to read such priceless articles as those referred to above.

Mr. Allen's suggestion of removing surplus and uncapped honey from the brood-chamber to prevent the crowding of the same with honey at the beginning of the laying season, is invaluable; but to how many beginners would this occur?

The writer recently visited a small apiary whose owner was the son of an old bee-keeper, but he had never heard of the American Bee Journal, and said that he did not know that bee-papers were published. This bee-keeper, if he may be called one, had hives with movable frames, but the frames were so knitted together that it was impossible to remove a single one of them from the hives. They had not been lifted out for years, and some of them never. Something was the matter with his bees, but he could not tell what. A glance at the entrance of some of the hives, or raising the covers was all that an experienced bee-keeper needed to do in order to correctly diagnose the condition of the bees. Old, worn-out queens! They did not swarm last year because there was no honey, and this year they were too weak to attempt to propagate their species.

"Swarm Prevention," by Louis H. Scholl, of Texas; "Closing the Season," by G. M. Doolittle; "How to Get Bees Started in the Supers," by the Editor; and "Queen-Rearing and Increase," by J. J. Wilder, of Georgia, in the August number, are also some of the best articles that have ever appeared in any bee-publication. That number was surely an "august" issue, in quality as well as name.

These varied experiences, suggestions and interchange of ideas, dovetailed together, round out the progressive bee-keeper and make him successful.

Kansas City, Mo.

The "Auto" for Bee-Keepers

Delivered before the San Bernardino County Bee-Keepers' Club at Redlands, Calif.,

BY GEO. L. EMERSON.

The first cost will be from $500 up. The operating expense varies from ½ to 1½ cents a mile, and the mechanical expense should not exceed $20 a year for the first 5 years, to which you must add the price of a new set of tires, for the average man will about use up a set a year.

It is practical to buy a second-hand machine and rebuild it to suit the bee-man's needs. It is necessary, if you are not posted in automobiles, to get the services of an expert to examine the machine and pass on its worth and suitability for rebuilding for your needs. Do not hesitate to get a machine because you do not know anything about one, for they are coming into such common use that it will soon be a very great inconvenience not to understand the handling and ordinary care of a machine. As fast as the auto is adapted to certain uses, it is found so much more satisfactory than the horse that usually the horse is never used again.

Among all the commercial needs, I know of none to which the "gas wagon" is so necessary as to the production of honey. There are two points of advantage that stand out prominently in our calling that need not be considered in other lines. First, stings won't hurt it and make it run away, kick your head off or lie down and die; consequently you can haul all your supplies right up to the honey house and unload them at your pleasure and move them away with the same ease. The second is, that it saves so much time in the rush season. In a business like ours, where we harvest our entire crop in the course of a few weeks, any convenience of equipment that will help us to save time will often mean more honey; for, who of us is there that has not had considerable loss at one time or another by not being able to keep up with the pace that the bees set? The heaviest extracting that I ever had was gathered in 4 days, and it was capped solid (black sage).

The auto is of special value in moving bees; in fact, it removes the most disagreeable features, and is very much easier on the bees. The jolting does not last so long, and a corresponding amount of honey is saved as the bees keep themselves gorged with honey only as long as the motion is continued. I have loaded 15 colonies of bees, moved them 12 miles, and put them in the apiary on the new stands in 1 hour and 15 minutes. It was all done in the cool of the morning, there being not much chance of the combs melting down. Where horses are used about bees, it is a two-man job; this is not necessarily so with the auto.

One man, with an auto carrying 10 cases of honey at a time, will haul more honey to the station than two men with a 4-horse team. If at night, the machine has not snowed the horses under too far, put on a night shift and keep it going, as it is not tired out. It may also be sent to town at night for a load of provisions, or cases and cans. With us, the auto with 4 men now does the same work that required 8 men and 5 horses, and the work is better done. We have 1300 colonies in 8 apiaries.

It is practical to use your moter to drive your hive-making machinery, pump water, saw wood, or any other power use, and in this way make it earn something while the bees are idle, but if you want to lay it aside, how much cheaper it is to run it in the shed and give it no more attention than to take care of and feed the horses!

Few people have grasped the idea that the gasoline power is the horse of tomorrow. Two men with a large tractor can do more plowing than a number of men with 30 heads of horses. The small orchardist with 5 to 20 acres of land must have a team, but there is not enough work to keep it busy more than half of the time, and the rest of the time they are eating their heads off. This is not so with the gas tractor, the expense stops when you put it in the shed. Besides, a machine has no will of its own; it will not reach up to browse on a tree, or perhaps run the cultivator into another tree and knock off the bark. While cultivating it does not stand on the vegetables; it does not get tired and have to rest every other round.

On a small farm or orchard a small machine can do anything that a horse can, and do it better and cheaper, but this machine should be so arranged that it will have the different implements attached to a sub-frame which is controlled from the operator's seat. A machine may take the place of all other farming implements by simply attaching the kind of tool you wish to work with. Growing hay for horses is a waste; let us use that ground for something we can eat ourselves.

Los Angeles, Calif.

Bright and Coated Nails

BY WM. MUTH-RASSMUSSEN.

In the March number of the American Bee Journal I noticed the article on nails for the covers of comb-honey cases. I have always used the plain (not cement-coated) nails, but have to buy them specially for this purpose. I have just been looking over several supply catalogs, and none of them quote any but cement-coated nails, except the very smallest sizes, ¼ to ⅜ inch.

This is a fault of the supply-dealers, and should be remedied. For covers of honey-cases there should be used ⅞ or 1 inch bright, flat-head nails of No. 18 wire. There are other sizes of bright wire nails, which, for different purposes, are preferable to the cement-coated ones. For instance, in mending broken sections, a bright nail is much easier pushed into the joint than one of the other kind. One serious objection to the cement-coated nails is that the hammer often slips on the nail-head, causing the nail to bend and mar the wood, and not infrequently the thumb of the left hand gets the deflected blow from the hammer. For this reason carpenters do not like to use cement-coated nails.

Probably the reason why so many bee-keepers are said to use cement-coated nails for the covers is that they cannot conveniently get the bright nails. I see no reason why supply-dealers should not keep this kind in stock, so that they could be furnished when called for, and of any size that might be desired by their customers. As an illustration of the difficulty and inconvenience of getting the bright nails, I will say that I once wrote to the H. P. Nail Co. of Cleveland, Ohio, who referred me to their San Francisco agent, and this again referred me to a local dealer, with whom I was not doing business, and who did not keep such nails on hand, but had to order them specially for me.

In an old bee-supply catalog I find the following bright, flat-head wire nails quoted, and the number of wire from which each respective size of nail is made. These sizes of wire are best for bee-keepers' use. The standard wire nails, commonly sold at hardware stores, are thicker and will split thin wood:

FINE. FLAT-HEAD WIRE NAILS.

Length of nails.	Size of wire.
¼ inch	No. 21
⅜ "	" 21
½ "	" 20
⅝ "	" 19
¾ "	" 18
⅞ "	" 18
1 "	" 18
1¼ "	" 17
1½ "	" 16
1¾ "	" 15
2 "	" 14
2¼ "	" 13

Independence, Calif.

How Does a Bee Find its Way Home?

BY DR. C. C. MILLER.

Has it some subtle homing instinct like a carrier pigeon, or does it merely depend upon memory? If a colony of bees be removed without any precaution a distance of 10 rods, at a time when they are gathering freely, the likelihood is that all the bees that go a-field will, upon their return, go straight to the old location, and be lost to the colony. If they are moved 2 miles or more, it may be that not a single bee will return to the old location. If the bee depended entirely upon instinct, why should it not find its home just as readily at a distance of 2 miles as at 10 rods?

DISTANCE FOR SAFE REMOVAL OF BEES

The practical side of this matter—or at least a practical side—will be readily seen when we try to decide how far a colony of bees must be moved so that there shall be no danger that any of the bees return to the old location. Whatever the whole truth may be, we are pretty safe to go on the theory that the bees depend upon memory. After a colony has remained in the cellar all winter, it may be put on a stand 5 or 10 feet from the old place without any trouble, although in some cases some of the bees will, after flying out, go back to the old place. Is this because of shorter confinement or because of better memories?

All bee-keepers are familiar with the fact that when bees take their first flight in the spring, or when young bees have their first play-spell, they fly with their heads toward the hive, gradually in larger circles, but still with their heads toward the hive. By this means they are trying to impress upon their memories the appearance of the hive and its surroundings.

If a bee depends upon memory, we shall find it reasonable to believe that circumstances make a great deal of difference about bees finding their way home from any given distance. Suppose colony A and colony B stand side by side, and that A has been working daily on a field a mile east, and that B has been working on another field a mile west. Now let both A and B be moved a mile east. A bee from A upon going a-field finds itself upon familiar ground, and when loaded up, what more natural than that it should go straight from the spot back to its old location, just as it has done so many times before? But a bee from B, which has never before been half a mile east of its former home, upon loading up will find itself on strange ground, and, depending upon memory, will have nothing to lead it back to its former home.

Contradictory as it may seem, we may find in some cases that a bee which has never been more than 1½ miles from home will readily find its way back to the old location upon being moved 3 miles to a new location. Suppose it has been working on Smith's field of alsike 1½ miles east. Then suppose it is moved 1½ miles east of Smith's field, or 3 miles from its old home. In starting out to forage, it may happen upon Smith's alsike. So it finds its way back to its old home in spite of the 3 miles distance which it has been moved.

We are not so much to move bees a certain distance as we are to move them to some place from which they are not likely to go to any spot with which they are already familiar. H. Strodtkoetter reports in Leipziger Bienenzeitung, that if he moves his bees to a heather field about 5 miles away before the heather is in bloom, not a bee returns to its old home; but if they are moved after the heather is in bloom many bees return to the former home. This he takes as proof that his bees go 5 miles for forage, but incidentally it confirms some of the views herein advanced.

DO BEES FLY IN A "BEE-LINE?"

It seems like heresy to doubt that bees always fly in a straight line. But really do they? Suppose a bee has been in the habit of working on a field of clover a mile directly west. Then one day it finds no nectar in the clover, but scouting half a mile to the north from there it finds a field of buckwheat. If it depends upon memory, will it not return home by way of the clover-field, over a route which it knows, rather than by the shorter direct course that it does not know?

A case that happened years ago is in point. Two nuclei were in a double hive, the entrances both in front, about 6 inches apart. The hive faced east, and the nucleus at the south side was taken away. The bees that had been in the south side, upon returning from the fields entered the south entrance as usual. In a panic they came out, flying about and running about, trying the same entrance many times. Finally they crawled along the alighting-board to the north entrance and were kindly received by the nucleus in the north side. When those bees returned from the field after that, did they go in a "bee-line" to their home? Not they. For days it was laughable to see them demurely entering the south entrance and then just as demurely coming out again and walking along the alighting-board to the north entrance. They had found the north entrance by going into the south entrance, and then going from there to the north entrance; they remembered that way, and that way they continued to go. If they failed to use the "bee-line" in a case where the "bee-line" was so easily to be seen, would they use it in more difficult cases?

Marengo, Ill.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Two Plans for Requeening an Apiary

My bees are hybrids, red clover and Banats. I wish to requeen with goldens. This last spring I bought and introduced safely a tested golden queen.

First plan · Very early next spring I wish to feed this colony to rear drones before the other colonies do so. When crowded with bees, and the first drones hatch, I will take away the queen and start cells similar to the plan of laying a comb on top of the frames. When the cells are ready to hatch, and about the time the colonies I wish to requeen begin to have eggs in the drone-comb, I aim to remove the old queens and substitute the cells. Of course, I can use some other colonies to rear queen-cells from eggs taken from my breeder.

Second plan: Later in the season, or after the honey-flow, I can rear and introduce virgins to colonies, and putting drone-excluders at the entrances of all hives cor taining undesirable stock, they will not mate through the excluders.

I thought by the first plan there would be no undesirable drones to worry about. Would the queen be first-class mated with drones from the same colony, or, in other words, with her brother? Would these drones, by the first plan, be old enough to mate with the queens when they are ready?
Subscriber.

Answer.—Either of your plans may work, although perhaps not exactly as you expect. By the first plan you may not succeed in having drones in your best colony in advance of the others, for if the others are stronger they may have drones first in spite of your feeding. You will do well to strengthen your best colony by giving it brood from the stronger of the other colonies. That will hasten the drones you desire and delay the others. You can also prevent undesirable drones by shaving the heads of the drone-brood every 2 weeks. If the drones you desire are hatched before queen-cells are started, they ought to be old enough. But what about drones from neighboring colonies? If there are bees within 2 miles of you, drones from them are likely to meet your virgins.

Killing the old queens and substituting queen-cells will interfere a good deal with your honey crop, for there will be 10 days or so when no eggs will be laid, and that means just so many less bees to gather the harvest. Some of the queens may be lost on their wedding-flight, and that will make matters still worse.

It is doubtful if you will like the plan of having queen-cells started by laying a brood-comb flat over the top-bars as well as the one given on page 243 of the August number of this Journal. The former plan originated in Austria, and since its first announcement the foreign bee journals have had little or nothing to say about it, which does not speak much for its popularity.

Although inbreeding is not always desirable, if you have vigorous stock you may have good results from having your virgins meet drones from their own colony. A drone from a virgin's own colony is not really her brother, but her half-brother. He has the same mother, but his father is the grandfather of the virgin, and the drone has none of the blood of the virgin's father.

Your second plan will make little or no interference with your honey crop, and on that account is preferable. If I understand you correctly, you mean to put excluders at the entrances of hives containing undesirable drones, expecting that these excluders, while allowing virgins to pass, would prevent the passage of queens. I am not sure you can get excluder-zinc of that sort. All that I have ever seen is made with slots so small as to prevent the passage of virgins. But you can prevent drones in the way already mentioned.

Introducing Queens—Making Nuclei—Exceptional Cases

In forming one of my nuclei I did not discover the queen in the hive from which I took it, but after looking over the removed frames carefully, I concluded she must be in the hive. In 5 days I looked to see if the new queen had begun to lay. I was surprised to find the queen still in the cage, although the candy was eaten out and the bees were going in and out freely. I looked over the frames and found brood too old to be produced by this queen, even had she been out of the cage and returned to it. Careful search revealed the old clipped queen from the parent hive. Was it not rather odd that the new queen was not destroyed? In another nucleus I found sealed queen-cells, and thought the queen had been destroyed. I was about to close up the hive, but decided to see how many cells had been started, so I looked at the next frame and there was the queen perfectly at home and "doing business." I cut out the cells and they have gone on all right.
Illinois.

Answer.—Although not much is said about it in books or papers, neither incident you mention is so very exceptional. I have had quite a number of cases in which the queen remained in the cage after the bees had eaten out the candy and were freely passing in and out of the cage. In some cases this had continued for a week when I let the queen out of the cage, and it is possible that it might have continued indefinitely. In your case I don't suppose the presence of the old queen in the hive had anything to do with the other queen remaining in the cage. At any rate in the cases I have had there was no other queen in the hive. You may ask why did not the bees kill the new queen as soon as they could get at her, seeing their old queen was in the hive. I don't know why it is, but it is a fact that bees will not molest a queen in a cage as readily as they will out of it. If that queen had come out of the cage, it is quite likely she would have been killed. Even then she might not have been if the older queen were quite old, for with the old queen in the hive bees will suffer a young one to be introduced, either virgin or laying. In one respect, however, you had something very unusual. You had a queen remain in the cage after the cage was open, and you had the bees practically accept a new queen with the old one present. I never had both of these things happen at the same time.

The other case—the bees starting queen-cells with the young queen present—is, I think, still more common. When a virgin queen is present, and the bees have eggs or young brood, they may start cells and then destroy them later. When a laying queen is introduced, I think it is the rule rather than the exception for the bees to start cells, to be destroyed by them a little later; although I am not so sure about their destroying the cells, for I have generally taken the destroying into my own hands.

Bees Throwing Out Larvae and Young Bees

What is the cause of bees throwing out their young, at intervals, the brood that have just past the larval stage? I have noticed, from March of this year up to date, the bees of every one of my hives at times throwing out white brood; and my neighbor informs me that he has noticed one of his colonies dragging out hatching brood—young bees that could crawl. He says this colony has plenty of stores in the brood-chamber, and he has taken 25 pounds of honey from it in the last few days (not from the brood-chamber, but from the super).

Now, I suppose that this destruction of brood was due either to lack of supplies or to the moth worm.
Tennessee.

Answer.—I don't know. You are quite right in thinking that starvation and the moth can generally be given as the cause of destruction of brood; starvation if the brood be still white, and the moth if it be nearly mature. But in the present case it cannot be starvation, and hardly the moth, since you had that in mind and would be on the lookout for it. Poison is the next guess. If it were in fruit-bloom it might be from poisonous spraying; but you say it has continued from March until the latter part of September. Is there a possibility of any other kind of poison? Can any one help with a better guess?

Changing the Location of Colonies

I have 6 colonies of bees which I keep for pastime and study, as they please me and take up many interesting moments. I would like a little information, but first I must explain. The hives are scattered, and I would like to have them closer together. One hive is north of my house, 3 west of the house, about 20 feet from the first, then about 50 feet farther west comes another, and then again about 80 feet west is the last one. The advice I seek is *when* and *how* to get these all to the east of the house. I winter them in the cellar. I will greatly appreciate your advice.
Iowa.

Answer.—That's easy. You will soon put them in the cellar, and when you put them out in the spring, without any ceremony, you can put them just where you want them. To be sure, some say that bees remember through the winter where their old stands were, but there cannot be much trouble from that, for I have many times put my bees on new stands in the spring without trouble.

Getting Honey from a Box-Hive

In June I found a large swarm of bees and put them in a shoe-box, not having any bee-hive. I have left them in the shoe-box, and I think there must be about 100 pounds of honey in it, as it is all that I can do to lift it. What is the best way to get a portion of this honey without damaging the bees or their winter supply? What is the best way to keep bees over winter? My cellar is rather cold, and slightly damp. Would it do to keep them there?
Illinois.

Answer.—It is very doubtful whether you can take any honey away without badly damaging the chances of the bees for safe wintering. Better leave it until spring, or until next summer after the bees have swarmed. They will not waste it, and you can get later what honey they can spare. If they were in a movable-comb hive you could safely take the honey now.

You are in latitude 41 north, or a little more, and in Illinois that's very nearly the dividing line between outdoor and cellar wintering, with mostly cellaring. But if your cellar is damp and cold, and there is no way to warm it, you may do better outdoors.

Feeding for Winter—Foundation

1. When shall I give the bees their large feed for winter?

2. How many pounds of sugar should I give a colony that has very little stores at the present time?

3. How many pounds of comb foundation would it take to fill one brood-chamber of 10 frames with full sheets? Also, to fill one super with 28 sections?
Indiana.

Answers.—1. The sooner the better. September is none too early, but in your locality there will be warm days much later.

2. Twenty-five pounds of sugar is none too much for a colony that has no stores. From that you must deduct for any stores they have on hand. Remember, however, that's the weight of the sugar, not sugar syrup, and the water in the syrup will of course be additional weight.

3. For 10 Langstroth frames it takes about 1¼ pounds of medium brood foundation, and one pound of light brood. For 28 sections it will take about ¼ pound of thin foundaiton.

How to Get Bees Cheapest

I lost all my bees last winter, I suppose from starvation. I don't know how to handle them, but am trying to learn. How can I get bees cheapest and learn how to take care of them?
North Dakota.

Answer.—I don't know how you can get bees cheapest. Depends upon circumstances. Generally you will do best to buy near home so as to avoid the heavy expense of expressage, for railroads will not carry less than a car-lot of bees by freight. Sometimes there may be bees purchasable within a short distance of you without your knowing it. A small advertisement in this Journal might bring you knowledge of such cases. It will be worth your while, too, to keep watch of the advertising columns of the bee journals next spring, for some one may there offer bees for sale that will meet your needs. As your bees died, perhaps you have saved the combs in good shape. Even if not in very good shape bees can clean them up. By spring the new parcels post will be in operation, and it may be that bees will be offered to be sent by parcels post in light shipping-cases. These you could put upon your empty combs or else upon full sheets of foundation.

As to learning how to to take care of bees, there are two ways—three, really. First, you can learn through your own experience and mistakes. Second, you can learn from the experience of others. Third, you can combine the two. The first is an excellent way. What you learn that way you are likely to learn for keeps. But it is an expensive way. And a very slow way. I learned in that way that it is not a good plan to try to increase too rapidly. But it was an expensive lesson, for it cost me 48 colonies of bees—rather parts of colonies, for they were weaklings. For a very few cents I might have learned the same lesson from the experience of others, as given in books and papers—if I had had the books and papers. But books and papers about bees were not as plenty then as now. The third way is the best way. Get all you can from the experience of others, by getting a number of books and papers. You may think a single book is enough. But by studying a second book, even if the same facts are presented, you will get a different view, and if you are going to do very much with bees it will pay you in dollars and cents to spend a good deal for reading. Then put into practice what you learn from reading, and add to it your own experience. There is really no short cut, although learning from reading is a very short cut as compared with going through it all for yourself. But it pays all it costs, both in dollars and cents and in satisfaction.

I have one hive consisting of two full-depth supers of 8 frames each, one on top of the other. The hive is extra heavy and must be full of honey.

Now I want to take off the top story and confine the bees to the lower one; but it is possible the queen may be in the top part. In that case what should I do. I am just a beginner? IOWA.

ANSWER.—Your problem is not a hard one, only it would have been better if you had acted earlier. It will be better if you can operate on a day warm enough for bees to fly, but a pretty cool day will do by taking certain precautions. Lift off the upper story and set it near the hive on an empty story, or something of the kind so as not to crush bees. Then set another empty story on the hive so you can brush the bees into it unless the day is so warm that bees will not be chilled by falling on the ground. Now brush the bees from each comb of the removed upper story into the hive on the stand.

As you lift each one out note whether there is any brood in it. If there is, then you must exchange it for one of the combs in the lower story, for you must leave all brood with the bees. Beside this you must make sure that you leave with the bees the equivalent of about 4 frames filled with honey.

Wintering With Empty Brood-Nest and a Full Super of Honey Above

I have 50 colonies of bees with empty brood-chambers. Can I winter them with a full extracting super on top? What would you do? VIRGINIA.

ANSWER.—There is no reason why your bees should not winter satisfactorily with empty combs in the brood-chamber and extracting combs filled with honey above, provided your extracting combs are of usual size, so as to contain 25 pounds of honey or more. They would probably ask nothing better.

Questions from a Subscriber in South America

1. Can you tell me whether J. J. Wilder's apiary would be a good place for a youth to learn practically all branches of apiary work, and whether he would take a youth and pay him wages from April to September? Could you recommend any other man?

My eldest son—just under 18—will leave school next Easter and attend the Ontario Agricultural College near Guelph, Canada. The terms are from September to April, and I should like to find a large apiary south of latitude 34 degrees, where my son can go from April to September and work for wages, and where he could learn from actual practice every branch of the business of what he learns in theory at the college. I want him south of latitude 34 to learn what will suit this climate, where we rarely experience frost at noon—never snow—and where bees can get pollen almost every month in the year in varying quantities. I want him to master queen-breeding and the improvement of bees; to learn all about spring management, strengthening the colonies for honey-flows, working for comb and extracted honey, and seeing large quantities put up for market, etc. Similarly another year from April to September I want him in a large poultry farm south of latitude 34, if I can find one. Can you help me?

2. Do any of the great apiarists like G. M. Doolittle, Dr. C. C. Miller, E. W. Alexander (deceased), Wesley Foster, J. J. Wilder, Louis Scholl and others make their income absolutely from their apiaries? I have read, "Keep more bees," and that mixed farming does not pay; "no one thing is done well—each gets somewhat neglected." Then I have read strong advice not to depend upon one thing alone. Combine, for instance, poultry and bees, or *vice versa*, or add poultry to orchard work, and so on.

3. I think my son ought to be able, in three or four years, to make a profit of three or four thousand dollars a year. Is this likely with very little capital to start with? Do the majority get a living from something besides the apiary? Do their writings for journals add a lot? Here we are near a city of more than a million and a quarter inhabitants. I work in an office in Buenos Ayres, and live out here in Quilmes, and attend, Saturday afternoons and a little on Sundays, to a dozen hives. From 10 colonies I secured (season before last) $150 (American money), on comb and extracted honey.

4. I would like your opinion or advice as to the advisability of having all eggs in one basket. It is looking far ahead, as my son will not make a start here until after he finishes at the Ontario Agricultural College in 1915. Will you do me the favor of sending me copies of the rules of bee-keepers' associations in different parts of America, to help me to form an association here, also foul brood laws?

5 Mr. Doolittle, in his book, "A Year in an Out-Apiary," speaks of turning his bottom-boards deep side up in winter, shallow side up, and narrow entrance in spring. I turn deep side up in spring for ventilation, shallow side up in winter for warmth.

BUENOS AYRES, SOUTH AMERICA.

ANSWERS.—1. My impression is that Mr. Wilder is a good man and a good bee-keeper with whom there would be a fine chance for the things you desire. As to the matter of pay, you would learn that by private correspondence. As to poultry farms in the South, I do not know of any, although there may be a number. A small advertisement in a bee journal or a poultry journal would no doubt bring you information on that point.

2. I cannot for certain tell about the names you mention, but my impression is that each of them gets practically all his income from bee-keeping or something connected with it. Opinions differ as to whether it is better to "keep more bees" or to unite something else with bee-keeping—and rightly. One man may do better to stick to bees alone; another may profitably unite with it some other line.

3. I think you have set your mark pretty high, and I doubt if it would be reached in one case in a hundred. The great majority of bee-keepers get only a part—in most cases only a small part—of their income from bees. The circulation of a bee journal is comparatively limited, so that it cannot pay the prices that periodicals of larger circulation can pay. Indeed, most of the writing for bee journals has for its pay the pleasure of helping others.

4. It's rather a ticklish matter to give advice about having "all one's eggs in one basket," but I would say don't start in at first with only one basket, and don't throw away the other baskets until you feel quite sure you will not need them again. In most locations there are years of failure, and there may be 2 or 3 such years in succession. Plainly it would not be wise to depend upon bees alone without having enough ahead to tide over any possible years of failure.

I think you will get the printed matter you desire by writing to General Manager N. E. France, of Platteville, Wis.

5. It is quite likely that even in your locality you would do better to have more room below bottom-bars in winter, although there is not the same chance for dead bees to be in the way that there is in colder climates. It would be better to have a deep space all the year around, but in summer the bees will build down if too much space is given. If your bees do not build down, the deeper the space in summer the better.

Number of Egss Laid by a Queen—The Black Bees of Switzerland

About that article in the American Bee Journal, page 308, "Number of Eggs Laid by a Queen," from the Schweizerische Bienenzeitung, page 257. Now, as I am a Swiss, too, and have kept bees for a number of years in the old country, I may be able to tell something more.

It says in one place, "Brood-rearing in his best colonies began about Feb. 10." This was no doubt outdoors, where brood-rearing begins earlier than in a cellar. Nobody in Switzerland winters his bees in a cellar. They are all kept in bee-houses or sheds. And, further, those brown or black Swiss bees do not as a rule breed up and have as much brood as the Italians or Carniolans. But one thing is sure, they never swarm half as much as the Italians or Carniolans, and this ensures them a good honey crop. Some 15 to 25 years ago there were bees imported from Italy and Carniola by the thousand every year, but soon our leading bee-keepers found out that these bees swarmed to excess, and started rearing their own queens.

The honey season in Switzerland starts with the first days of May, as soon as the fruit bloom opens. This lasts almost through the whole month. They figure on some honey from the fruit trees every two years. Then, again, every two years we figure on some honey-dew from the pine trees. Sometimes the honey-dew starts in May and lasts until the last days in July, but is heavy for only a few days.

Their best honey-plant, a certain kind of clover, known as esparcet (Sainfoin in English), starts to bloom the first days in June and lasts for about three weeks. But this clover does not yield everywhere. In most places there is not enough to go all around for a crop of honey.

Then the first days of July they get their second, or our summer, honey from the white clover and bear-claw. This generally lasts until the lasts days of July. Then the honey season is over. They never get honey in August or September, as they do in this country.

If they get a good crop from the fruit trees they do not expect a good crop in July; or if they don't get any honey in May then July will be a good month Some years they only get a little honey in June. Thus you may see why there is such a big difference between your best colonies and Dr. Bruennich's best colonies July 30; and at the same time you can see why they prefer the black bees in Switzerland, but only the Swiss blacks.

Again, there is a big difference in the black bees in northern Germany, where they have their buckwheat fields in the fall. Those blacks are more inclined to swarm than either Italians or Carniolans. I am trying those Swiss blacks in this country.

ILLINOIS.

ANSWER.—Clearly Mr. Widmer knows what he is talking about, if I may judge from foreign journals. I have written him to tell us how his Swiss bees turn out, especially as to swarming. You know the Swiss claim to have bees nearly non-swarming.

Narration of Failures With Combs Below the Brood-Nest

With reference to two questions which you answered in the August American Bee Journal, I am now in a position to tell what really happened as the results of the experiments.

First, as to putting a full depth hive-body with drawn combs under the brood-chamber. I found no evidence that the queen had used the under combs. The bees did store a considerable amount of honey in the under body; in one case a full frame was sealed. I had 3 colonies fixed this way One gave 10 completed sections and 4 filled, but sealed on only one side, the remaining sections not being worked at all, only the foundation was gnawed some.

The second colony had two extracting frames on each side, and sections in the middle. The frames were filled and sealed, while only five or six sections were completed, the others were in all stages. This colony stored the full frame below.

The third colony had extracting frames only, of which four or five were filled and sealed, the others being in all stages.

My deduction is, that while the full depth under body may have prevented swarming, yet the falling off in surplus must have been considerable, and I would not practice that arrangement again.

The second question, as to putting a shallow extracting super with foundation and excluder under the brood-chamber, putting the queen also below during a honey-flow to get combs drawn and additional brood reared. This was a dismal failure. About a week after this arrangement was made, I chanced to pass the hive and discovered the queen out on the ground with only two or three bees queen clipped. I made haste to put the colony in normal condition, and found practically nothing done in the super which it had been placed under. This colony has been rather poor all the season; it was a swarm with a virgin queen last season.

You will see the outcome of these experiments is pretty closely in accordance with your answers to the questions. I am pleased to let you know what really happened. The knowledge acquired by personal experience is what really "counts;" the real relation of cause and effect is thus more clearly appreciated and understood. NEW JERSEY.

ANSWER.—Your report is of value. We like to report our successes, yet the report of a failure may be more useful than the report of a success, since it may save others from the same failure.

Your queens did not go down to lay in the combs below. Sometimes they will, sometimes they will not. I don't know just what rule they go by, but it may be something like this: When combs are put under the brood-chamber early in the season, when the bees are doing more at brood-rearing than at storing, the queen is likely to go below; if a good flow is on, the bees are likely to think the added combs below are put there to accommodate the honey-flow.

Another lesson is, that if drawn combs

and sections are given at the same time, the drawn combs have the preference, and the sections take second place.

Like enough the queen would not have been found on the ground if a comb with at least a little brood had been at her disposal. Even then you wouldn't get work done in a middle story with only foundation so long as there was room enough in the stories above.

Now It's the Stingless Bee

"The stingless bee is the next product of a man's ingenuity.

Mr. Burrows, an apiarist of Loughton, in Essex, after two years of experiments, has obtained a species of bee which can be handled by a child in perfect safety.

He mated the Cyprian drones and the Italian queens, the result being the production of harmless insects which, however are splendid workers. It is asserted they are less liable to disease than the ordinary honey-gatherer.

It appears that the new product has a stinger, but it is useless as a weapon of offense. Yet they die when they lose it."—*London Sun.*

The above clipping was taken from the New York Sun of Oct. 3 issue. What do you think of it? This is my version of it: Suppose we do succeed in producing a stingless bee that has all the requirements; honey-production, good wintering qualities, etc. We cannot control the wild bees, and they will always have stings. What is there to prevent them robbing out the hives of our *stingless* bees, if they are unable to put a defense? I never saw a stingless bee (and we have them now) that were of any commercial value, and while Prof. Burrows may have been successful as per the statement of the Sun, he has got to show me. I think you are not far from Missouri, either.

New Jersey.

Answer.—Don't you go for to be too sure that bees are "unable to put up a defense" just because they are stingless. The stingless bees in South America are good defenders because they are good biters. However, you and I needn't get into any quarrel about that part of it, for we've both got to be shown something more than a newspaper report before we believe that the stinger of a cross between Cyprians and Italians "is useless as a weapon of offense."

Wintering Bees—Choosing a Location—Tartaric Acid in Sugar Syrup

1. Can a 2 or 3 frame nucleus be successfully wintered in a cellar in northern Ohio?
2. In selecting a location, would you prefer one in a limestone region?
3. Would you consider 10 inches of packing over the brood-nest enough for outdoor wintering?
4. Is there anything that can be used in the place of tartaric acid to prevent sugar syrup turning back to sugar? Tartaric acid is of no use in my locality. The sugar syrup I fed a week ago has crystallized and the bees are carrying it out. How would glycerine act?

Ohio.

Answers.—1. I doubt it unless it has quite a lot of bees, or is in the same hive with another nucleus.

2. I don't know enough about it to say; but I have an idea that a limestone region is good for clover, and so good for bees.

3. Yes.

4. You can use citric acid, cream-of-tartar, or vinegar. But I doubt that either would be better than tartaric acid, and am very much puzzled at your saying that your syrup with tartaric acid in it granulated within a week. Reports of tartaric acid failing to do its duty have been very few. Formerly I used it a good deal, and always with success. I used an even teaspoonful of the acid to 20 pounds of sugar, making the syrup 5 parts sugar to 2 parts water. I suppose glycerine would be effective.

Grape Juice as a Winter Food for Bees

In central California the grapes are sour (not much sugar) and my bees have gathered some of this juice, consequently the honey has a somewhat sour taste. Is the same good winter food for bees or for consumption?

California.

Answer.—I don't know. My guess is that it will be all right for winter stores if the bees have time to ripen it. It will be all right for consumption if the taste is not objectionable, and of that you can judge better than I.

REPORTS AND EXPERIENCES

Mr. W. E. Eastman With a Friendly Swarm of Bees.

Page 303, in the October number of the American Bee Journal, our Canadian friend, J. L. Byer, mentions a swarm issuing Sept. 4. I can beat him regarding date, although my swarm was not large. Enclosed you will find a picture of a swarm that came out Oct. 4, about noon. This swarm settled high up in a tall tree and was allowed to hang there until the next day. Aided by a long pole we then persuaded them to come down for closer inspection. Then with the assistance of their nice appearing little queen, I induced them to cluster on my hand while the "gude wife" got us in focus and pressed the bulb.

As the parent hive could not be located, they were hived in a style appropriate for May or June, but they will probably not survive the winter.

W. E. Eastman.

Rock Creek, Ohio.

More About Bitter Honey

Ever since the question as to the source of bitter honey came up in the American Bee Journal, 1911, I have observed the matter very closely, and will say it is not the bitterweed in this section that causes the honey to be so bitter. This spring (1912) I put some empty combs on a hive very early, and when the white clover was in bloom I secured a small surplus of honey in those empty combs.

This honey was, as Mr. Russell says on page 183, as bitter as if 50 percent quinine. It was of a light yellow color, and could not have been the bitterweed in this case, for this plant was not yet in bloom. Nor were horehound and the wild grapes, as mentioned in the questioon on page 212, 1911. But there was a tree in bloom at the time which the bees worked on extensively that is called "black gum." I don't know anything about the black-gum honey, whether it is bitter or not, but as soon as it went out of bloom I noticed the bitter honey stopped at once. Some may say that the bitter honey was stored last fall, and when the flow came on they carried it up into the super; but they didn't, for many persons owning the old box-hives robbed their bees very early so they would get the honey later on in new combs. The honey they took out was stored last fall, and was of good flavor, but in the new combs they got that bitter stuff I have been telling about.

About the time I thought the bitter honey had quit coming in, I put on supers and secured a quantity of nice, good-flavored honey. I left the supers on until about the first of October. Although the bitterweed was present it did not make any of the honey bitter in the least.

After reading Mr. Cunningham's article on page 150, and Mr. Hughes' on page 205 of the 1912 issue, I decided to test the matter, as my bees were getting lots of pollen from the bitterweed. I examined the brood-chamber of one hive and tasted of the freshly-stored honey; also of the yellow pollen. To my surprise it was not in the least bitter. Not being satisfied with that I tried two more hives, and no bitter honey or pollen was found.

Now, the bitterweed may be a different kind of weed. The one I speak of grows about the size of "dog-fennel," and has a blossom about the same size, but in color a solid yellow, resembling the yellow of the sunflower. It continues in bloom until killed by frost. I have never known it to yield any bitter honey in this section of the State, GEORGE GUNTHER.

Cushman, Ark.

Black Bees in the Extreme West

This has been a very poor season on this side of the Rockies. There are lots of wild bees in the big woods, but they are hard to get on account of the timber being so high and dense. A neighbor cut down a tree which had a colony of bees in it about 75 feet from the ground. When the tree fell it broke in pieces, scattering on the honey everywhere. What would you think of a log scaling 8000 feet of lumber? These logs are handled with what they call donkeys—steam rigs with steel cable attached.

There is a little black bee here that is different from the common bee, and which the bee-hunters praise because they say that these have "the stuff." One told me that he got 20 gallons of "strained" honey from one tree; another, 400 pounds.

I saw a man at the State Fair with about a ton of honey on exhibition. He said he had one colony headed by a very black queen which gave him 287 pounds of section honey. He wants to breed from her on account of her prolificness, even if she is black. The blacks have the most admirers in this part of the country.

I have 40 colonies, mostly Italians headed by queens which I got from different breeders. Breeders should take more precaution to have their queens fertile before sending them out to the bee-keeper. M. S. SNOW.

Littell, Wash.

Some Producers Sell too Low

In one of my previous reports on the price of comb honey in your esteemed journal, the writer stated that River honey was only 11 to 12 cents, while others were from 15 to 16 cents for No. 1 fancy. While at the State Fair I was severely criticised for this report, as two parties were securing 15 cents for all of their honey, and had trouble in selling some of it to their local buyers for that price.

I also stated that I would advise the American Bee Journal, and have them make the correction. At the same time I called the attention of the parties to the fact that some grocers were selling at retail nice honey, 2 sections for 25 cents, and asked the parties to explain the condition. They could not answer who the bee-keeper was who did this selling, and, of course, the grocer would not give his snap away.

Berkeley, Calif. JOHN C. FROHLIGER.

Bees Averaged Over 50 Pounds to the Colony

Dr. Bonney, of Buck Grove, Iowa, reported in August, and it was published in the Bee Journal for October, that "if there is any surplus stored hereabouts it will be from now on."

Our 200 colonies stored 5½ tons of surplus up to July. I believe in an improved bee, and we have some that *always* store some surplus. I have one colony that has stored 50 pounds and more *every* year for 10 years, and has not cast a swarm in that time.

Who says a bee is a bee?

We also made an increase of 50 colonies, *but not by natural swarming.* E. S. MILES.

Dunlap, Iowa.

Losses Made Up in Illinois

Best fall flow I have ever seen. Bees are swarming well. Prospects are that there will be as many bees to winter as we have ever had before, and they will be in fine condition, as the honey is of the best quality.

St. Anne, Ill., Sept. 1. H. S. DUBY.

Another Poor Report from California

This has been the poorest honey season I have ever had in my 5 years of bee-keeping. I have 170 colonies, and have only secured two tons of extracted honey and no comb. I ought to have had at least 12 tons from so many bees; however, bees have made their own living all the season except during the month of May.

I haven't sold any honey as yet except just a little at retail now and then, enough to keep me in postage stamps. We have had for the last 4 or 5 days a very stiff north wind in which the bees are unable to fly, and it is a little cooler. We expect a rain as soon as the wind changes, as we get our rain from the south. E. A. HOWARD.

Yuba City, Calif.

Losses Expected in California

Most of our bee-keepers in the country will lose a large percentage of bees this winter, owing to such a poor season just past, and a good many are extracting so late they will take all the honey the bees have stored for winter, thus starving them out.

Our inspector comes around just when he ought to stay at home, removing all the covers from the hives which the bees have sealed for winter. Being very poor of sight, he puts back about one cover in fifty in its proper place; thus the bees start robbing at once, and the result is that nearly all the apiary is infected.

Salinas City, Calif. W. F. HACKMANN.

Motto—"Take Bee-Papers"

The reason I take the bee-papers (and I take all three of the bee journals published in the United States) is that that is the only way to keep up to date, and keep up with the improvements as they are discovered.

I have kept bees 34 years, and at present I am running four yards, and would not think of getting along without the bee-papers, and I think any bee-keeper should take one or more bee-papers even if he or she has only one colony. A. W. SMITH.

Parksville, N. Y.

Bees Did Well in Michigan

Bees have been doing finely. We had a good clover and buckwheat flow, also autumn flowers were good Bees have built up rapidly, and will be well provided for winter. I have 20 colonies for sale; that many more than I have time to handle.

Litchfield, Mich. EDWIN EWELL.

Poor Report from Oklahoma

Bees have done no good here for two years past; too dry. I am going out to cut some bee-trees, and will look sharp for foul brood. I believe it is present among the wild bees in the woods here. Will report later.

Lynch, Okla. L. W. BENSON,

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

Golden Queens that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
Robert Inghram, Sycamore, Pa.

For Sale—Three-banded Italian Queens bred for honey, gentleness, and prolificness. One, $1.00; 6 for $5.00, Wm. S. Barnett,
7A4t Barnett, Va.

My System — Union bee-hive and Queen. Will increase both your colonies and honey crop, and improve your stock, making bee-keeping a real pleasure. Cash orders $10.00.
3Atf Joe Egner, Box 552, Lavergne, Ill.

Queens — Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have, Frank M. Keith,
3Atf 83½ Florence St., Worcester, Mass.

Quirin's famous improved Italian queens nuclei, colonies, and bees by the lb., ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. 3A5t
Quirin-the-Queen-Breeder, Bellevue, Ohio.

Carniolan Queens—Bred from best imported stock. Many colonies can be manipulated without the use of smoke or veil. Untested, one for 75c; six for $4.25; twelve for $8.00. Tested, one for $1.00; six for $5.00; twelve for $10. William Kernan,
Rt. 2, Dushore, Pa.

SUPPLIES.

For Sale—A full line of Bee-Keepers' Supplies. Agents' prices. Save freight.
Dreamland Farms, Buckingham, Fla.

For Sale—Empty second-hand 60-lb. cans 25 cts. per case of two cans; 100 for $22.50.
7A4t E. R. Pahl & Co., Milwaukee, Wis.

For Sale—Empty second-hand 60 lb. cans, two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, Ohio.

Aluminum Hive Numbers 1¼ in. high, 2c each figure; 50 or more, 1½c, postpaid, including brass nails. Henry Benke,
Pleasantville Sta., N. Y.

Order Ideal Winter Cases now, and be ready for the stormy days. Extracted honey taken in exchange. R. H. Schmidt,
Rt. 3, Box 200, Sheboygan, Wis.

HONEY

Honey for Sale—Clover honey of the finest quality in new 60-lb. cans at 9 cts. per pound. 8Atf J. P. Moore, Morgan, Ky.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

Choicest Thick Ripe Clover Honey in full-weight 60-lb. cans at 11c per pound. Sample mailed for 8c. E. W. Brown,
10Atf Box 17, Willow Springs, Ill.

Fancy and No. 1 white-clover honey $3.50 and $3.35 per case of 24 sections, six cases to carrier. Robert Gilbert,
11A2t White Bear Lake, Minn.

Wanted — Choice extracted white and amber honey in barrels or cans. Send sample, and price delivered f. o. b. Preston.
11Atf M. V. Facey, Preston, Minn.

For Sale.—Some extracted honey in 60-lb. cans. The early crop, white, well-ripened, of heavy body, and finest flavor. Price, one can or more, 10 cts. per lb. f. o. b., Leon.
11A1t Edwin Bevins, Leon, Iowa.

For Sale.—Water White Alfalfa, Light Amber Alfalfa, and Amber Fall Honey from our own apiaries. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

MISCELLANEOUS

For Sale.—Dog coon hound, guaranteed to run coons. John Drenth, Kersey, Ind.

Colorado Bee-Keepers' Directory is ready. Join the Association ($1.00), and ask for copy. Wesley Foster, Boulder, Colo.

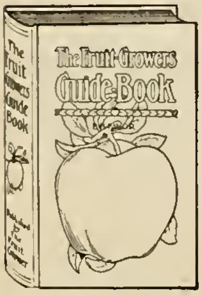
Make Pure, delicious fruit acids from honey. Cures all diseases, man or beast. Patent allowed. Mailed, 25 cents.
1A1y C. W. Dayton, Chatsworth, Calif.

Wanted—Apiarist or helper who is willing to invest $250 in apiary. We allow you wages and percentage of crop as manager. Particulars on request. Apiarist, Sawtelle, Cal.

For Sale — White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks, $1.25 each. A. F. Firestone, Broadwell, Ohio.

New Crop white sweet-clover seed, 4 lbs. by mail, prepaid, $1 12; 50 to 100 lbs., 15c per lb., hulled; unhulled, 3c less. Alfalfa seed, same price. R. L. Snodgrass,
Rt. 4, Augusta, Kan.

The Fruit-Growers' Guide Book



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HONEY AND BEESWAX

CHICAGO, Oct. 17.—Sales of honey during the month of October have been above the average, both in comb and extracted. The market is well supplied, but not overstocked for this season of the year (the major part of the comb honey being sold during October and November).

Prices on No. 1 to fancy comb honey range from 17@18c per lb. Off grades from 1@3c per lb. less. Amber grades from 12@15c per lb. White extracted ranges from 8@10c per lb.; ambers from 7@8c per lb. Beeswax, 30@32c per lb. R. A. BURNETT & CO.

BOSTON, Oct. 21.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

KANSAS CITY, MO., Oct. 18.—The receipts of both comb and extracted honey are more liberal; the demand very good. With colder weather we look for a still better demand. We quote: No. 1 white comb, 24 section cases, $3.25@3.35; No. 2, $3.00; No. 1 amber, $3.00; No. 2, $2.75. Extracted, white, per lb., 8½c; amber per lb., 6@7c. Beeswax, per lb., 25@28c. C. C. CLEMONS PRODUCE CO.

INDIANAPOLIS, Oct. 18.—Extracted honey of finest quality is selling at 10½@12c in 5-gallon cans, according to quantity at one shipment. No. 1 and fancy white comb is selling at 16@17c. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

CINCINNATI, Oct. 18.—The demand for comb and extracted honey is fair, with a good supply. No. 1 white comb honey selling in large lots at $3.60 per case, 24 sections; there is no demand for off grades. White extracted honey in 60-lb. cans is selling from 9½@10c. Light amber in barrels from 7@7½c; in 60-lb. cans from 8@8½c. Beeswax in fair demand, selling at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

NEW YORK, Oct. 18.—We have a fairly good demand for white comb honey at prices ruling about the same; that is, fancy white 15c, with some exceptionally fine lots which will bring 16c; No. 1 white at 14c; No. 2 white and light amber around 13c; mixed and buckwheat at from 10@12c, according to quality. Buckwheat honey seems to be rather scarce, the crop evidently did not turn out as large as expected. Extracted in fair demand for all grades; white clover selling at around 8½@9c; light amber at 8c, and amber at from 7@7½c. West Indian arriving quite freely and selling at from 75@85c per gallon, according to quality. Beeswax quiet at 30c.

HILDRETH & SEGELKEN.

CINCINNATI, Oct. 18.—The demand for both extracted and comb honey is not up to expectations by far for this time of the year. Big buyers refuse to pay the prices we must ask, and we fear that it will be a case of a small business or lower prices, and owing to the high prices we have paid it will be impossible for us to lower our price. We are selling strictly fancy comb honey at 14@16½c a lb., according to the quantity and quality purchased; amber comb honey is not wanted at any price. What little is sold of fancy extracted honey in 60-pound cans we are getting 8@10c a lb., while amber honey in barrels we are selling at 5⅜@7c, according to the grade and quantity purchased. There is plenty of beeswax, and the prices are much easier than they have been for some time. We are paying 28c a lb. delivered here for choice, bright yellow beeswax.

THE FRED W. MUTH CO.

SAN FRANCISCO, Oct. 18.—The demand for comb honey is still beyond the supply, and fancy and No. 1 still very limited, and what arrives is soon taken up. Extracted honey is somewhat easier, and several carloads have been upon the market, and the water white and lighter grades have found ready buyers. Fancy white comb, 16@17c; dark to amber, 13½@15c per lb.; river comb, 11@12½c per lb. Water-white extracted, 8@8½c; light amber, 7½@8c; amber, 6@7½c; lower grades, 5@6½c per lb. Beeswax, 27½@30c for nice, yellow wax, 23@26c for the darker grades.

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THE season just past has demonstrated more clearly than ever the necessity for being prepared for a honey-flow BEFORE it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall have carload orders coming from the factory very often for the next few weeks. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—six percent for cash orders sent in October, the discount diminishing one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices as yet has been announced, and you may, therefore order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - OHIO.

"If goods are wanted quick, send to Pouder."

Bee-Supplies

Standard hives with latest improvements, Danzenbaker Hives, Sections, Foundation, Extractors, Smokers; in fact, everything used about the bees. My equipment, my stock of goods, the quality of my goods and my shipping facilities can not be excelled.

PAPER HONEY-JARS

Sample Mailed Free

For extracted honey. Made of heavy paper and paraffine coated, with tight seal. Every honey-producer will be interested. A descriptive circular free. Finest white clover honey on hand at all times. I buy beeswax. Catalog of supplies free.

WALTER S. POUDER, Indianapolis, Ind.

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Protection Hives

The best and lowest-priced double-walled hive on the market. This hive has ⅞ material in the outer-wall, and is not cheaply constructed of ⅜ material, as some other hives on the market. Packing or dead-air space, as you prefer. Remember, winter is approaching. Get your bees into comfortable quarters before it is here. Send for a catalog.

A. G. WOODMAN CO., Grand Rapids, Mich.

ECONOMY: ECONOMY TO YOURSELF ECONOMY TO YOUR BEES

Are Two Essential Points Gained by Using

Dittmer Process Comb Foundation

Because it is the same TASTE, and the same SMELL, and the same FIRMNESS, as the COMB the Honey-Bees make themselves. It is the more acceptable to them because it is not like their OWN COMB.

Remember, Mr. Bee-Keeper, that to you HONEY IS MONEY—then use

Dittmer Process Comb Foundation

Work for a Full-Capacity Honey-Crop.

Send for Samples. All Supplies at Prices you appreciate.

Gus Dittmer Company, - Augusta, Wisconsin.

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The Campbell Correspondence School

Has a course of thirty subjects and sixty lessons in Intensive Farming. This Course is the result of thirty years experience and demonstration by Prof. Campbell and associates. It applies to Irrigation, the humid regions, and the semi-arid country. It brings results.

Send us your name and address and we will mail you a sample copy of the Scientific Farmer and a catalog of the Correspondence School. DO IT NOW.

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LINCOLN, NEBRASKA.

Famous Queens!

From Improved Stock.

The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, $1.00; 6 for $5; 12 for $9. Tested, $7.50; 6 for $8; 12 for $15.00. Breeders of either strain, $5.00.

Nuclei, with Untested Queens — 1-frame, $2.50; six 1-frame, $15; 2-frame, $3.50; six 2-fr. $20.40.

Nuclei with Tested Queens—1-frame, $3.00; $2x 1-frame, $17.40; 2-frame, $4.00; six 2-frame, $23.40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drone as well as the Queens.

We guarantee safe arrival and satisfaction.

D. E. BROTHERS,

2A9t **Jacksonville, Ark.**

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BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES, 995 Ruby St., Rockford, Ill.

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EVERY BEE-KEEPER KNOWS

The Worth of A Good Queen

Knows the worth of a good strain of bees and also knows how worthless is a poor queen and inferior bees. Try our strain of three-banded Italians, they will not disappoint you. Tested queen, $1.00 each; Untested, 75c; $7.00 per doz. No disease. Send for price-list. 6Atf

J. W. K. SHAW & CO.,

Loreauville, Iberia Parish, La.

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FOR SALE

Remainder of season Golden Tested Queens **90c** each; Untested, **60c** each. Strictly no disease. Safe arrival and perfect satisfaction **guaranteed.**

R. O. COX, Box 8, GARLAND, ALA.

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FOR PURE

CARNIOLIAN ITALIAN and BANAT Queens

for fall delivery send your orders to me or write for circulars.

PRICE

75c each; $8.00 per dozen.

Grant Anderson, San Benito, Texas.

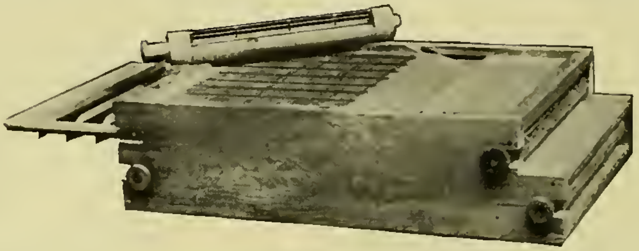
DON'T WORRY

About Keeping Your Colonies Warm

Be safe and use **Schamu Patent Roller Entrance** HIVE BOTTOM

IT

Protects against robber bees, allows breeding up in early spring. Controls swarming. Changes the amount of ventilation to suit the season.



IT

Allows feeding in a honey-dearth. Controls the supply of drones and ensures the best mating of Queens. Closes the entrance so as to allow moving.

Serves the purpose of drone-trap, feeder, bottom board, entrance-block—and does the work infinitely better. Makes Bee-keeping pleasant as well as profitable for either amateur or professional

"The improved bottom-boards will do all the inventor claims and more."
J. W. Ware, Puyallup, Washington

PRICES: $2.00 F. O. B. Liverpool, New York, for the eight-frame size.
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Ask for descriptive booklet, and send all orders to

DR. CHAS. G. SCHAMU, - - LIVERPOOL, N. Y.

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Light Amber ALFALFA HONEY

Light Amber FALL HONEY

IN ANY Size Quantities, in Any Size Packages.

If your Honey Crop is short, and you want to supply your regular trade, write to us for prices. We are sure that we can supply what you want at prices you can pay. Five cents for a liberal sample of any kind desired.

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Or will pay Cash for it, or Exchange for Goods. 5 percent early order discount on foundation or other bee-supplies during November

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AMERICAN BEE JOURNAL

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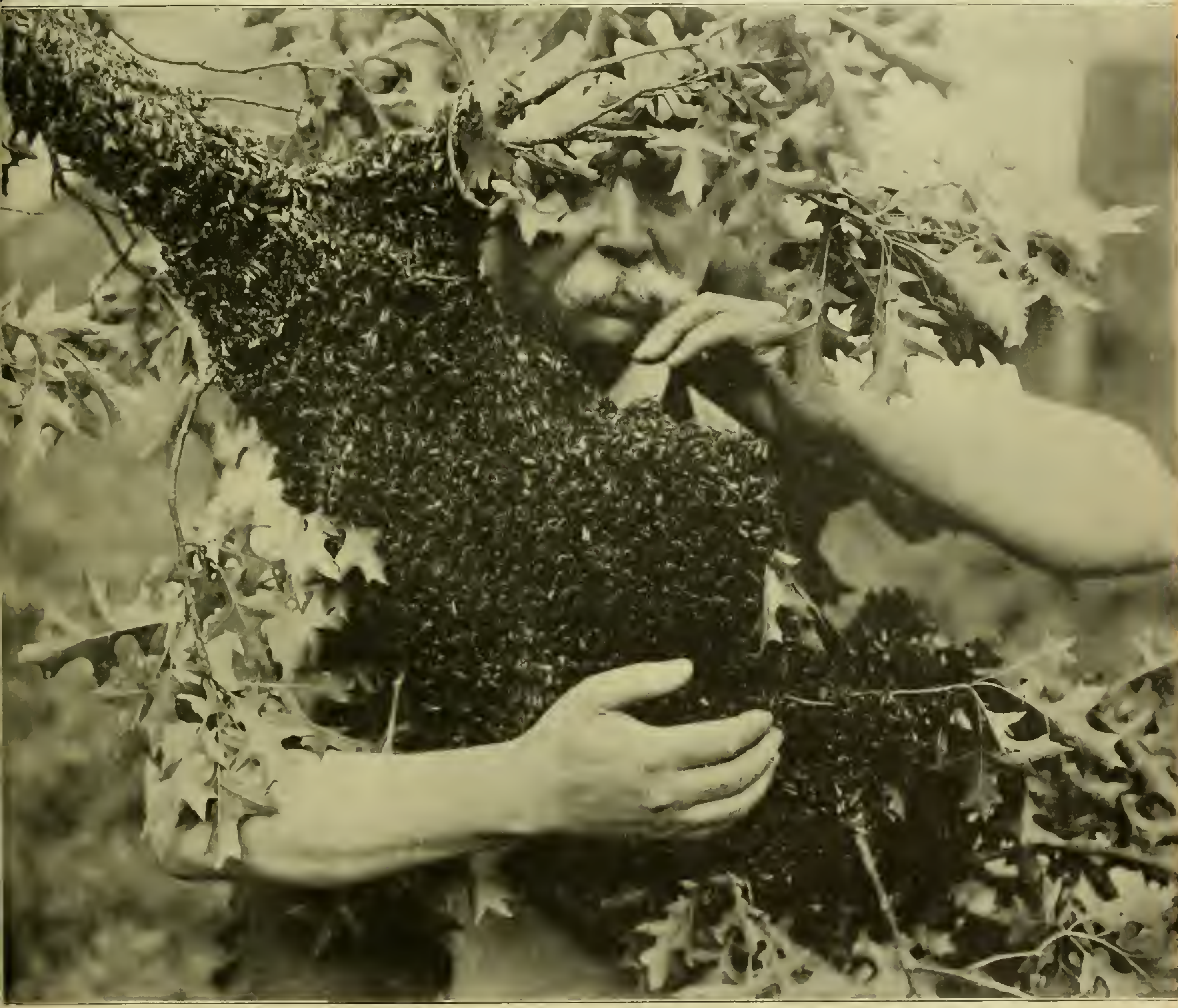
DECEMBER 1912



We Hug the Things We Love

This is the picture which took first prize in our competition of Photographs, which closed Nov. 1. It is the same swarm as shown in our previous issue, of which several studies were taken by Mr. Edward F. Bigelow, of Arcadia, Sound Beach, Conn. See his article, page 338, November number.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec12" on your label shows that it is paid to the end of December, 1912.

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Send all orders to **CORDELE, GA.**, and state from which point you wish your Supplies shipped. J. J. WILDER.

We HAVE THE GOODS

At money-saving prices. We defy quantity, quality, and prices. Our Catalog will tell it all. Send list of Goods for quotations.

Fine Cockerels, Barred and White Plymouth Rocks, and White Wyandotte, $1.50.

H. S. DUBY, St. Anne, Ill.

NOTICE

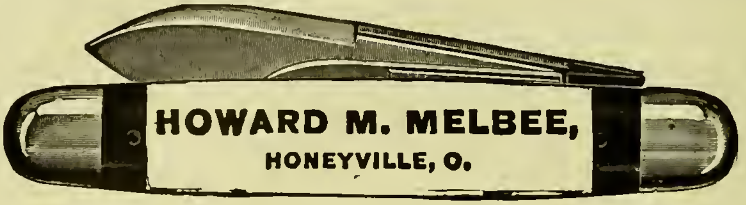
I have moved from **Jacksonvile, Ark.** to **Attalla, Ala.**, where I will continue to breed fine Bees and Queens,

**Three Band,
Golden Italians,
and Carniolans**

All bred in separate yards. Untested—one, $1.00; six, $5.00; twelve, $9.00. Tested—one, $1.50; six, $8.00; twelve, $15.00. For Queens in larger quantity and Nuclei, write. Let us book your order now, so you will get your Queens when you want them. No disease of any kind. Safe arrival and satisfaction guaranteed.

D. E. BROTHERS, Attalla, Ala.

BEE-KEEPER'S NOVELTY POCKET-KNIFE.



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

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IF SHIPPED TO US FOR RENDERING

We Extract 99½ Percent of Wax

And then Pay you Highest Market Prices, or 2 cents additional in Trade

YOU CAN'T APPROACH THAT FOR PROFIT

We need great quantities of Comb and Extracted Honey
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We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
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"Langstroth on the Honey-Bee"	$1.20
2 Copies "Honey-Money Stories," at 25c	.50
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"Southern Bee Culture," by J. J. Wilder	.50
"Pearce Method of Bee-Keeping"	.50
"Hand's 20th Century Bee-Keeping"	.50
20 Copies "Honey as a Health-Food"	.30
Total	$4.00

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Do you want a home in the best part of the Northwest—**Northern Idaho?** If so, let me hear from you. I have no land for sale myself, but can refer you to those who have. If you will let me know what you'd like, I can also then refer your enquiry to reliable real estate men here who can supply you. Remember, no irrigation is necessary here. It is a fine country for diversified farming—dairying, fruit-growing, bee-keeping, poultry, etc. You would be pleased if you could come and look this country over. But the next best thing is to do it by correspondence. I will be glad to help you in any way I can, if you will let me know just what you want.

Special Bee-Literature Offers

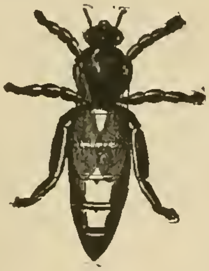
Ask for my circular containing special offers of bee-literature. And if you want any bee-papers or other magazines, send me your list and I can quote you a price that will save you some money, I am sure. Address,

George W. York,
Publisher and Subscription Agent,
302 S. Boyer Ave.,
Sandpoint, Bonner Co., Idaho

BOOKING ORDERS FOR 1913

Untested Italian Queen-Bees

Our Standard-Bred

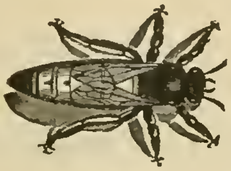


6 Queens for $4.50; 3 for $2.50; 1 for 90 cents.

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

George W. York & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co., Kan., July 15. A. W. Swan.

George W. York & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9 1-2 Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada, July 22. Chas. Mitchell.



George W. York & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. Oglesby.

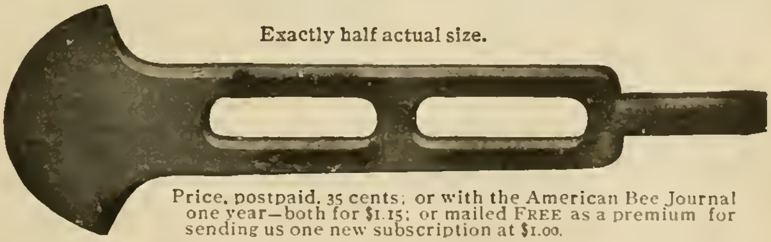
George W. York & Co.:—The queen I received of you a few days ago came through O. K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line.
Marion Co., Ill., July 13. E. E. McColm.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 90 cents, or with the old American Bee Journal for one year—both for $1.60. Three Queens (without Journal) would be $2.50. or 6 for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

American Bee Journal, Hamilton, Illinois.

The Ideal Hive-Tool Free as a Premium

Exactly half actual size.



Price, postpaid, 35 cents; or with the American Bee Journal one year—both for $1.15; or mailed FREE as a premium for sending us one new subscription at $1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

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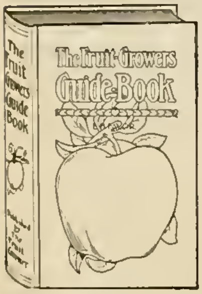

is a complete Encyclopedia of horticulture. It has 300 pages, and is well illustrated. All about spraying, fungicides, insecticides; how to can Fruits, Vegetables, etc. It was written for the man with a thousand trees, as well as for the one with a few trees in the dooryard. It is the result of years of study and travel.

The Fruit Grower, published monthly, is filled with up-to-date matter on horticulture.

THE GUIDE BOOK, regular price	**$1.00**
FRUIT GROWER, one year -	**1.00**
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We club all **three** of these sent to one address for **$1.50,** or we will send the **first two** for **$1.00.**

Send all orders to

AMERICAN BEE JOURNAL, Hamilton, Ill.

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Early (FROFALCON) Queens "ITALIANS"

February and March deliveries—for Untested, $1.50 each; April, $1.25. Tested Queens, 50 cts. additional; Select Tested, $1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,
257-9 Market St., **San Francisco, Cal.**
Or Berkeley, Cal.

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FAMOUS QUEENS DIRECTLY from ITALY

BEES MORE BEAUTIFUL, MORE GENTLE, MORE INDUSTRIOUS, THE BEST HONEY-GATHERERS

UNIVERSAL EXPOSITION
ST. LOUIS, MO., 1904, HIGHEST AWARD

Extra Breeding Queens, $3; Selected, $2; young, fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write ANTHONY BIAGGI, Pedeville, Bellinzona, Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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Sample copies free for conventions. Write for them for your convention.

NATIONAL BEE-KEEPERS' ASSOCIATION

E. B. TYRRELL, Sec'y,
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White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents. By express f. o. b. Hamilton—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.50; 50 pounds for $6.50; or 100 pounds for $12.00.

We can also furnish the yellow biennial seed. This variety blooms about two weeks earlier than the white which makes it preferred by some bee-keepers. For the yellow seed add one cent per pound to the above prices on the white variety. Seed will be shipped promptly on receipt of order.

American Bee Journal,

Hamilton, Illinois.

Make Your Hens Lay

You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

Free Book Tells How

MANN'S LATEST MOOEL BONE CUTTER

cuts easily and rapidly all large and small bones with adhering meat and gristle. Automatically adapts to your strength. Never clogs. Sent on **10 Days' Free Trial.** No money down. Send for our free books today.

F. W. MANN CO. Box 348 MILFORD, MASS.

Grab's Appropriate and Practical CHRISTMAS GIFTS

Carry the Spirit of the Day

"The Latest Out"

GRAB'S AUTOMATIC LIGHTER

And Ash Tray

For the Boy Sweetheart

A Practical Gift for "Him"

He'll appreciate it. Give something new—different—original—this time. A gift that combines usefulness with the spirit of day—
Does away with the matches entirely—Gives a large steady flame. Press the lever—patented lighter does the rest, 1000 lights for one cent. Lighter detachable from ash tray. Always ready—will last a lifetime.
Sent anywhere on receipt of price.

Price, $1.25

YALE-PRESS

For your Wife—Sweetheart

For Pressing Fruits, Meat, Lard, etc.

Best, most practical, durable press for making *Jellies, Jams, Grape Juice, Cider, Wine, Fruit Ices, Pressing Meats, Stuffing Sausages, etc.* No woman has strength to press fruits or meats with her hands; besides, without a press half the juice, and nearly all flavor, which only great pressure brings out, is lost. All steel and iron plates. Clamps to table, etc. With a few turns of the wheel materials are put under 2,000 lbs. pressure, 4 quart size, **$4.50.**

Sold on 10-days' trial. Money-back guarantee. Booklet, "Aunt Sally's Best Recipes," with description of Press, sent free. **Price, $4.50.**

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Mud, snow dust and dirt will not be tracked over your floors if you use

GRAB'S FOOT SCRAPER

outside your door. The only device made which cleans bottoms and sides of shoe in one operation. Has ten parallel plates for scraping soles and two stiff bristle brushes which clean sides of shoe

AUTOMATICALLY ADJUSTS ITSELF

to any size shoe. Handsomely enameled. Looks neat. Can be rotated and swept under. Fastens to doorstep or any handy place. Get one and save useless work. **Price, $1.00.**

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ILLINOIS BEE-KEEPERS

Important Announcement

Chicago Distributing House Discontinued for Lewis Beeware and Dadant's Foundation

The Arnd Honey & Bee-Supply company having gone out of business. Lewis Beeware and Dadant's Foundation will no longer be distributed from Chicago.

Note-the-New-Arrangement

NORTHERN ILLINOIS BEE-KEEPERS IN THESE COUNTIES

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DeKalb
Dupage
Ford
Grundy
Iroquois
Jo Daviess
Kane
Kankakee
Kendall
Lake
La Salle
Lee
Livingston
McHenry
McLean
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Stephenson
Vermilion
Whiteside
Will
Winnebago

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G. B. Lewis Company

Home Office and Factory, Watertown, Wisconsin

By dealing direct with the G. B. Lewis Company, the bee-keepers in the above counties get the benefit of the service afforded by their immense factory and warehouses. Watertown, being located near the Illinois State line, and having two trunk line railroads and two express companies running direct into Illinois, the G. B. Lewis company can reach you as easily and quickly from Watertown, Wisconsin as from Chicago.

SPECIAL INDUCEMENT

G. B. Lewis Company will guarantee that the freight charges to your station from the factory at Watertown, Wisconsin, will be no more than from Chicago. They will prepay the difference, if there be any, right on your shipping bill.

Bee-Keepers in remaining Counties in Illinois

Send all your Inquiries and orders to

Dadant & Sons, Hamilton, Illinois

The above firm carries constantly on hand an immense stock of Lewis Beeware and are manufacturers of Dadant's Foundation. By dealing with them direct you will receive as good service as from Chicago, or even better.

NOTICE.—**If you are not on the Mailing List of the G. B. LEWIS COMPANY, send your name in at once. Their Annual Catalog will be issued about January 1st, which will tell you whether to send your Order to Watertown, Wisconsin, or Hamilton, Illinois.**

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., DECEMBER, 1912

Vol. LII---No. 12

EDITORIAL COMMENTS

How Far Can Swarms Travel?

T. W. Swabey, in the British Bee Journal of Sept. 26, asks the above question and quotes a previous writer as authority for the statement that a swarm traveled more than 10 miles, though having settled on a tree about a mile distant from its final abode.

In Vol. XVIII of the American Bee Journal, page 186, Q. C. Jordan reports having followed a swarm 6 miles.

In Vol. XX, page 634, James Heddon says that a swarm alighted on a ship in the middle of Lake Michigan. The writer holds that they will go 25 to 50 miles.

In Vol. XXV, page 55, H. G. Rogers ridicules the 25-mile flight, and says: "We will soon have them crossing the Atlantic."

Eugene Secor, a very reliable writer, in Vol. XXV, page 230, mentions runaway swarms as going 8 to 10 miles, to his knowledge.

G. M. Doolittle holds that bees will readily go 5 to 9 miles for honey. Why not a swarm, for a home?

The flight of bees is variously estimated at from 10 to 60 miles an hour. The latter speed was given after having turned bees free from a running train, but Cheshire very properly says that this furnishes "no evidence of their velocity when unaided, since the train carries the air lying in its neighborhood along with it, as leaves and paper scraps frequently make clear." His conclusion is that the flight ranges between 2 and 16 miles per hour, depending upon the load and nature of the errand.

When in the enthusiasm and energy of his teens, the writer several times attempted to follow a runaway swarm, but the result was invariably, after a perspiring run over fields, hills and well-nigh impassable ditches, to be stopped breathless and discouraged against a fence or on the edge of a pond, while the bees went on; their enticing roar finally dying in the distance. The Mississippi River is but a mile and a half away, and at this point a mile wide, but he never succeeded in following them to its shores.

However, swarms have often been known to cross it to reach the woods on the other side. But an experienced bee-keeper, who lived on the opposite shore, frequently told us that such swarms were almost invariably queenless. Very probably the queen accompanying the swarm was unable to sustain her flight, and was perhaps dazzled by the sunlight reflected upon the water.

From all this we conclude that it is useless to try to establish an exact limit to the possible flight of a swarm, and that this question is not to be settled any more positively than the question we might ask some inveterate angler: "What was the weight of the largest fish ever caught?"

The Iowa State Meeting

The bee-keepers of Iowa are urgently requested to attend their State convention, which will convene at Des Moines, in the Club Room of the Savery Hotel Dec. 12 and 13, 1912, as announced in the November number, page 327.

It is for the bee-keepers of each State to decide, after earnest and intelligent discussions, whether they want laws concerning bee-diseases, whether they want courses of study in their industry at the Agricultural Colleges, and also what recognition ought to be given to the production of honey in the State and County Fairs. It is also time for our State Associations to be legally incorporated and endowed by the States in a way similar to the incorporation and endowment of the State Horticultural Associations. All these things may be done, if we take an interest and show our wants.

The past few years' work has shown that there is no difficulty in getting recognition from the Legislatures, Colleges or Agricultural Fairs, if we show ourselves and claim our rights.

If a concerted action upon the suggestions above given is successful, we will get the following results:

1. Greater information for the public on the uses and value of honey, hence larger and easier sales.
2. Correct information concerning the usefulness of bees in the fertilization of flowers and their harmlessness in the puncturing of sound fruit.
3. Greater protection to the pursuit, in the combat against contagious diseases and others.
4. Increase of information among the bee-keepers themselves.

These things are worth striving for, even if we do not give consideration to the pleasure of exchanging views, making new and pleasant acqaintances and renewing old ones. The bee-keepers are almost as gregarious as their bees, and would often meet were it not for the distance they usually have to travel to get together. Make an effort, dear reader, and attend this meeting. We know you will never regret it. There ought to be 300 Iowa bee-keepers at this convention, for Iowa is one of the leading States in the Union, and if it has remained in the background it is not owing to lack of information, but lack of centralization of effort.

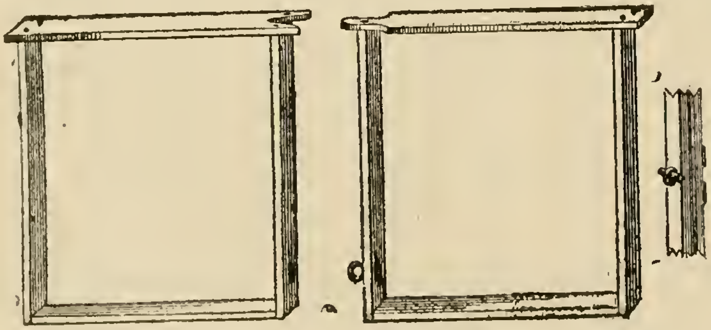
“Queen-Rearing Pointers”

The reader will find in this number an article under the above heading, from the pen of Mr. Frank F. France, who has not only practiced bee-culture with his father, but has also worked in California with practical apiarists, thus getting double drill, in addition to his own ingenuity.

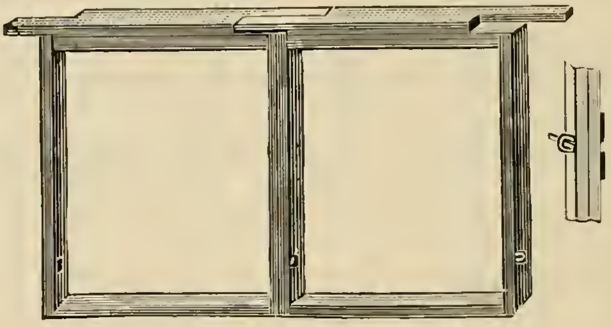
We cannot better recommend his method than by giving our testimony of experience in this line. During the first of his queen-rearing practice, in the '60's, Grandfather Dadant had noticed the desirableness of rearing queens in strong colonies, and the better quality of such queens.

It was with us as with the Frances; we did not like to rear queens in baby nuclei. A compact brood-nest of some size was needed. Two to four short frames proved better than one to two long ones, especially as the Langstroth and Quinby frames are of much greater length than height. A frame of either kind, divided into two parts, placed side by side made a much more compact brood-nest than in full length. But the handling of an odd frame is undesirable unless it can be originally taken from and afterwards returned to the full-frame hive.

The first divisible frames that we used were as cut below. The frame was in two halves, one-half bearing a tongue in the top-bar and a staple in the side-bar, the other half had a notch at both top and side bar. We placed a number of these in our best breeding colonies early in spring, and we thus had combs with brood from our best queens to make our nuclei as early as desirable, in half-length hives provided with dummies, etc. But after making the exchanges and shifting of frames common in queen-rearing during an entire summer, we often found ourselves in the fall with a number of tongue half-frames without the corresponding parts in the same nucleus, and *vice versa*. It is usually necessary to break up a nucleus in the fall—even if it is quite strong—and unite it with a full colony. For this purpose all those half frames should be interchangeable in order to double them back to original size. This gave rise to a slightly different style of divisble frame, the invention of David & Guillet, of Savoie, shown herewith. These frames having right and left shoulders, and hooks and eyes on both sides are interchangeable, so that any two of them can make a full frame. When the season is over any 4-frame nucleus in the yard may be easily inserted into a full colony, or several nuclei may be built into one in full frame shape. The little hives which have contained these nuclei are put away for another season.



The First Divisible Frame.



The Improved Style of Divisible Frame.

On the other hand, one may happen to rear a number of good queens and not need them all. These good queens in a good season may build up their nucleus into a strong colony. A 6-frame nucleus, well stocked with bees and brood, at the opening of the August flow, may be transferred into a large hive by doubling up the frames, and with a little help a good colony for winter will result. This can be done only with some such method as the France method.

In mentioning all these points, the writer is speaking from an extended experience backed by good results.

Spanish - Needles an Incorrect Name

A short time ago we received from Mr. E. R. Root an enquiry concerning the plant popularly known in the Mississippi Valley as “Spanish-needles,” which yields great quantities of honey of as golden color as the blossom itself. Mr. Root quotes Prof. Lovell, of Maine, and A. C. Miller in support of the statement that this name is a misnomer. Close examination at this late date, when the plants are almost entirely dry, tends to indicate that the true Spanish-needle is the taller kind, *Bidens bipinnata*, devoid of yellow rays in the blossom, and supplied regularly with two awns or burs on the seed, while the real honey-producer is a short plant, not usually much over a a foot in height, bearing bright yellow blossoms, and producing seeds with three awns or burs on a wedge-shaped seed. Those of our readers who live near the lowlands producing this honey-plant are requested to send us what information they have. We wil later publish the decision of the eastern botanists concerning this plant. If their criticism is well taken, the plant should be popularly known as “bur-marigold.”

Introducing a Queen to a Stubborn Colony

When a colony has been queenless for a considerable time, it sometimes happens that the bees of such a colony will not only reject any queen given them, but will destroy any queen-cell given, and refuse to start queen-cells from young brood furnished them. A case of this kind is reported in Bienen-Vater. The colony was yet strong in bees, and there was no weak colony with which to unite it. The queen was taken from another strong colony, and given caged to the queenless one. Then the two colonies were made to exchange places. The field-bees that had belonged to the queen, upon returning to their old location, found their own queen caged, and, of course, were kind to her. In the other hive all the home-bees being young and freshly made queenless, a queen-cell was readily accepted.

Care of Bees in Cellar

If bees are abundantly supplied with good honey, and are in the right kind of a cellar, they should need very little attention throughout the winter. Not every cellar, however, is a perfect cellar for wintering bees, and it should be the care of the bee-keeper to do the best he can to make up for all deficiencies.

First in importance is pure air. Try to have the air in the cellar as nearly as possible like the air outdoors. If you can do no better, open up at night some door, window, or other opening whenever this can be done without making the cellar too cool. Better the air too cool than too foul.

As to temperature, it is generally believed that at a temperature of about 45 degrees bees are most nearly in a dormant condition, and so will consume less stores, and the less stores they consume the longer they can stand confinement. But thermometers are not always correct, and it will be well for you to see at what degree *by your thermometer* bees will be most quiet, and then try to keep the cellar at that temperature.

Some have reported success in cellars much colder. And if the air is as pure as it is outdoors, why should not bees stand as much cold as outdoors? All the same, no matter how well bees may winter, say in temperature of 38 degrees, would they not winter at least a little better in a temperature that would require consumption of less stores?

On the other hand, it is becoming a common thing to have furnaces in cellars, making it impossible in some cases to keep the temperature down as low as 45 degrees. Again it is true that the bees will stand the change of temperature, if only the air is kept pure. In the cellar of the writer it is nothing unusual for the temperature to be 55 degrees or higher. But doors or windows are kept open enough so the air is much the same as outdoors.

The cellar should be kept dark, but again the matter of pure air makes a difference. Let the air become foul, and then open a door or window, letting in air and light in the middle of the day, and thousands of bees will fly out of the cellar and be lost. But open the door in the evening as soon as it becomes dark, and in the morning when the air has become pure, the light may shine brightly into the cellar without disturbing the bees for some time. If the bees are in an inner room, the door from this inner to the outer room may generally be kept open all the time, and the outer door may often be kept open all day long without doing any harm, for the light in the inner room will not be very strong. The outer door may be kept more or less open, according to the needs of the case.

Mice should be poisoned, or trapped, or both. Persistent trapping with the little traps that can be had for 2 or 3 cents each will keep the trouble down to a minimum. Some screen the entrances to the hives with coarse wire-cloth, three meshes to the inch. If a mouse should thus be fastened into a hive, it is better to have one hive disturbed than several.

Bees will of course die through the winter, and more or less dead bees will be on the cellar floor. The beginner may be tempted to close the entrance with wire-cloth finer than three meshes to the inch, so that neither mice nor bees can pass through. Don't think of such a thing. While that may keep the floor of the cellar clean, it is much more important for the health of the bees that the floor of the hive be kept clean. Let the dead bees fall upon the floor, and then sweep up the floor. It may not need sweeping possibly for the first two months, but later it will need sweeping every two weeks. It may or may not be advisable to clean out occasionally the dead bees that are on the bottom-board, according as they do or do not accumulate there.

In the Bee-Keepers' Review for September, Elmer Hutchinson states that he has wintered bees in a very dry cellar with a temperature of 34 degrees during almost the entire winter. Commenting upon it, the editor of Gleanings in Bee Culture states that in their experience a temperature of 34 degrees, in a bee-cellar, if long continued, has proven disastrous, and he asks whether the thermometer had been tested for correctness? There is another question which might be asked: In what part of the cellar was the thermometer kept? There is quite a difference in temperature in different parts of a cellar where many bees are kept, because their own warmth affects the temperature materially.

MISCELLANEOUS NEWS ITEMS

More About European Foul Brood.—The following was included in a letter recently received from Morley Pettit, Provincial Apiarist of Ontario, Can.:

"I find the article by Dr. Miller, on a question of smells, page 324, and would like to say a few words in reply to his question. The difference between Dr. Phillips and myself, which is a difference of experience rather than a difference of opinion, has often puzzled me. I have not yet had the opportunity of seeing European foul brood in an apiary across the line, but in every case which I have seen here, especially where it is new territory, there is always the pronounced odor which can be compared to nothing better perhaps than decayed fish. I well remember in 1909, when I was sent into Northumberland county to investigate the outbreak there, going with the local inspector, Mr. Warrington Scott Wooler, to a number of apiaries that were badly diseased.

"It was pitiful to see many apiaries where 30, 40, 50, and 60 hives were sitting out with scarcely any live bees left in them, and that decayed, offensive condition of the combs in every one. The weather was very warm and sultry, as it often is in June and on entering the apiary the odor could be noticed quite distinctly in any part of the yard before any hives were opened. On lifting out the combs and holding them up for examination, it was almost sickening. The outward symptoms, apparent to the eye, as described in Dr. Phillips' bulletin, were all practically the same, and why there should be this difference in the odor has not been explained to my satisfaction.

"I am sending a copy of this letter to Dr. Phillips, to see if he has anything further to suggest."

Since the above was put in type, the Editor has paid a visit to the Provincial Congress of Apiarists of Ontario, and there saw a sample of European foul brood in a not very advanced stage. Although the odor was characteristic and not at all similar to that of American foul brood, which we all agree resembles very much that of a joiner's glue pot, yet it was not offensive enough to be conspicuous. The stage of the disease mentioned above by Mr. Pettit, where "from 30 to 60 hives were exposed to sultry weather, with scarcely any live bees left in them," is sufficient to explain the very unpleasant effect upon the nostrils, and after once getting a puff of this stench, one would naturally detect it with disgust where it was the least noticeable. Were we not afraid that Mr. Pettit might object to bouquets, however well deserved, we would tell our readers that Mr. Pettit has very favorably impressed the writer with his cautious, judicious and methodical ways.

◆

Origin of Honey-Dew.—Concerning the origin of honey-dew, Dr. A. Heinz, University professor at Agram, reports as the result of his observations: That honey-dew is produced if unusual increase of transpiration is excited by strong light in leaves growing rapidly and not too old, and high concentration of the sap is induced. If the disturbance continues beyond a certain limit, the leaf suffers and falls prematurely. The formation of honey-dew does not always depend upon an absolutely high stimulation of warmth and light, but rather upon a sudden great difference, which occurs, for instance, when after very cool spring nights the organ which has been suppressed. in its activity suddenly receives the stimulation of the intense morning sun. To this P. Neuman adds:

"I have also frequently observed on young lindens upon which few plant-lice were to be found, that the drops which are supposed to be sprayed upon the leaves by these insects were numerous upon the uppermost tender leaves where no lice were to be found at all."
—*Bienenwirtschaftliches Centralblatt.*

◆

Illinois State Meeting.—The Illinois State Association met as per call in the State House at Springfield, Oct. 30 and 31.

It was a very good meeting. Two men of National repute were present, Mr. N. E. France and Mr. E. B. Tyrrell.

Only one paper was read before the Association. The other contributors opened their subjects by speaking instead of reading essays. But the discussions were lively and the question-box well supplied.

The most interesting part of the program was a talk by N. E. France, who spoke on divers labor-saving methods and devices. Any person who hears Mr. France becomes easily convinced that he is as much of a benefactor to the apiarian public through these talks as he was through his management of the National Association.

Mr. France spoke with praise of the concrete hive-stands. He thinks they should come into general use. But he spoke disparagingly of concrete hive-covers, which some persons recommend. He tried them and found them too heavy, too brittle, and too much subject to temperature changes, for they are, he says, "too cold in winter and too hot in summer." He spoke of having tried salt water in troughs side by side with clear water, and that the bees visited in preference the salt water, but it should not be heavily salted; only enough to taste the salt.

He advised, when you build a bee-house, to place the joists just far enough apart to hang frames between them by nailing a projecting strip on the underside of the joist, for the ends or shoulders to rest upon. In this connection he emphasized a remark made elsewhere by the Editor, that frames which are hanging freely in an open space without being close to each other are much less apt to be infested by the moth.

Mr. France also stated that the moth-balls sold by all druggists for keeping moth away from woolen clothes in the summer will also keep the bee-moth away from combs in a box or a hive. But, to his mind, the bi-sulphide of carbon saturating a small rag and inserted in a hive is the best moth-killer.

Two resolutions were brought forward by the Resolutions Committee and were passed unanimously. The first was to recommend the establishing of a course of apiculture at the State University, the other an increase of the premium list of prizes by the State Fair management to equal that of Minnesota.

A very interesting part of the program was the statement made by Mr. Tyrrell, the National Secretary, concerning the present and future of the National Association. He acknowledged that there were flaws in the Constitution which must be mended at the coming February meeting, but explained what great hopes he had for the future of the Association. It was generally conceded that we must be patient and give the new arrangements a fair trial. Meanwhile the State Association voted to accept members at the former price of $1.00, with the understanding that such members would not reap the benefits of membership in the National on an equality with those who paid $1.50 for membership in both.

This is only a short synopsis of the meeting. The full report, taken down by Miss Stewart, the usual stenographer of the State Association, will be published in book form in the same manner as formerly, and will be mailed to all members free of charge. Those of our Illinois readers who do not yet belong to the State Association, should not hesitate to send their $1.00 or $1.50 for both Associations to Mr. Jas. A. Stone, Rt 4, Springfield, Ill.

The election of officers, which took place at the last hour, resulted as follows: President, E. J. Baxter; Vice-Presidents, W. B. Moore, H. S. Duby, Aaron Coppin, G. M. Withrow, I. E. Pyles; Secretary, Jas. A. Stone; Treasurer, Chas. Becker.

Members Present at the Illinois State Meeting.

First row, left to right—J. H. Roberts, E. B. Tyrrell, N. E. France, C. P. Dadant, Chas. Becker, E. J. Baxter, Xavier Widmer. Second row—W. B. Moore, W. H. Gray, L. C. Dadant, Jas. A. Stone, G. M. Withrow, D. S. Beeler, J. M. Beeler. Third row—B. L. Sherril, H. S. Duby, B. O. Vaughn, H. L. King, W. H. Stumm, A. Coppin, Miss Coppin, Miss Stewart.

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Sweet Clover is a Biennial.—By oversight, an error at the top of page 302 was allowed to pass uncorrected. It is there said that sweet clover is a perennial, and does not bloom until its second season's growth. Unless there is a brand of sweet clover in Texas different from that which grows farther east, none of it lives longer than two years. The most of it is biennial, grows one year, blossoms and seeds the second year, and then dies, root and branch. None of it lives through the second winter. There is one kind of yellow sweet clover that is not even biennial, but annual.

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Massachusetts' Ten-Weeks' Course.—We wish to call attention of the bee-keepers to the opportunities offered by The Extension Service of the Massachusetts Agricultural College, in the Ten-Weeks' Course, beginning Jan. 6. A course in bee-keeping is designed which will be a general, practical survey of the maintenance of bees, not only for their products, but as an adjunct to modern agriculture. Special effort will be made to correlate the subject with the various phases of horticulture; namely, fruit growing, cranberry culture, market gardening and greenhouse crops. Particular emphasis will be laid upon the most recent and approved appliances and systems of manipulation. The fine collection of appliances of the college will give exceptional opportunity to the serious apiculturist.

For further information apply to the Director of The Extension Service, M. A. C., Amherst, Mass.

Honigloesmaschine. — Heather does not grow in this country—more's the pity—but in the countries in which it does grow the honey secured from it is considered the best in the world. It has one peculiarity which is at the same time a strong recommendation and a drawback: It is so thick and tough it cannot be extracted. Now, however, the German bee-journals are in great glee over the fact that a machine has been invented which will loosen the honey in the cells so as to make it capable of being extracted, an invention which is hailed as being worthy to be classed with the invention of movable combs, the honey extractor and comb foundation.

The machine is called *Honigloesmaschine* "*Triumph*," or "honey-loosening machine." To operate, the comb is uncapped as usual, then laid flat upon the table of the machine, when the operator turns the crank of the machine for a short time, turns the comb over and operates on the other side, and the comb is then ready to go into the extractor.

It would seem that when the contents of the cell are slightly stirred, the cohesiveness of the honey is broken up, making it possible to throw it out. Over the table of the machine is a system of long needles, but without sharp points, 160 in number, standing perpendicularly. When the crank is turned the comb is raised and the needles enter the honey, 3 or 4 in each cell. So delicately do they act that if one of them strikes a cell-wall it is either turned aside or raised up. When one comes in contact with the bottom of a cell, or with the wood of a frame, it is raised up. The result is that the honey is "loosened" in the cell and the comb is entirely uninjured. The continued turning of the crank drops the table, moves table and comb along about half an inch, the comb is again raised, and so on. The cost of the machine is about $9.00.

Page-Kenkel Mfg. Co.—In the advertising columns of the Bee Journal will be found the advertisement of Page-Kenkel Mfg. Co., of New London, Wis. This firm is the successor of the old Page & Lyon Mfg. Co., who have been in the bee-supply manufacturing business for 30 years, and with whom many of our subscribers are already acquainted.

California Meeting.—It was decided at a recent meeting of the State Association to hold the annual meeting in Los Angeles, Dec. 12, 13 and 14, with evening sessions on the 12th and 13th. From letters received a large number of prominent bee-keepers from northern and central California are expected, and arrangements are being made by the committees to entertain them royally, and to arrange for a program which will be exceptionally interesting.

Men of national repute will be present. The California bee-keeper who misses this meeting will be unfortunate.

The Los Angeles County Bee-Keepers' Association will hold its meeting on Dec. 11, just previous to the big meeting.

Iowa Bee-Keepers to Meet.—The following is the program of the first annual convention of the Iowa State Bee-Keepers' Association, to be held in the Club Room of the Savery Hotel, Des Moines, Dec. 12 and 13, 1912:

Thursday 10 a.m.—Address of the President—W. P. Southworth, Sioux City.
Report of Secretary-Treasurer—C. L. Pinney, LeMars.
Greeting from Illinois—C. P. Dadant, Hamilton, Ill.
Committee Appointments.
Thursday 2 p.m.—"Production of Comb Honey"—F. W. Hall, Colo.
"Production of Extracted Honey"—D. E. Lhommedieu, Colo.
"Wintering Problems"—C. H. True, Edgewood.
"Helpful Suggestions"—T. W Blackman, Nevada.
Friday 10 a.m.—"Fuss and Fun of Bee-Keeping"—Eugene Secor, Forest City.
"The Foul Brood Situation"—Frank C. Pellett, State Inspector, Atlantic.
"State Aid for the Industry"—E. E. Townsend, Ft. Dodge.
"Is Improvement Possible?"—Dr. A. F. Bonney, Buck Grove.
Friday 2 p.m.—Question-Box.
"Making the Most of the Home Market"—J. L. Strong, Clarinda
"Co-operation in Marketing, Increasing the Forage and Bettering Locality"—Frank Coverdale, Delmar.
"Exhibits at Fairs as a Means of Advertising"—G. W. Nance, Anthony.
Open discussions led by prominent bee-keepers.
Making the most of the home market.
Increasing the forage and bettering the locality.
Exhibits at Fairs as a means of advertising.
Election of officers.

Let every bee-keeper bring samples of his best product to put on display, and come prepared to demonstrate any new kink or short cut that is likely to prove of value to the fraternity.

Headquarters will be at the Savery Hotel.

A Socialist Bee-Keeper Candidate for Governor of Idaho.—A small handbill is before us giving the portrait of Mr. L. A. Coblentz, of Idaho Falls, Idaho, a very neat-looking man, and his program as candidate for Governor. We quote:

> "The candidate for Governor has been a grain farmer, a fruit farmer, and is now an *apiarist*. It may seem a joke to vote for one of your own class Custom makes the most sensible program seem foolish if we do not stop to think. But think. Would it not be a far greater joke for a working man to vote for a big business man, a banker, or even a lawyer, who, nineteen times out of twenty, is the servile tool of capitalism?"

Strength of Bees in Uniting.—An instructive article on uniting bees, by Ernest Eaton, appears in the Irish Bee Journal, page 96, in which we find this sentence: "Success lies in having the bees about the same strength, in the same condition, and quite free from irritation." That equality in strength of the two lots to be united should be placed first as a requisite of success is something new. Coming from the source it does, it is worth consideration. Yet it is only fair to say that the experience of the writer in hundreds of cases would lead to the belief that there is no disadvantage in having the two lots of different strength, if indeed there is not a positive advantage in it. By far the greater number of cases have been in the spring, when a single frame of brood and bees would be united with a weak colony, the frame being placed at the side of the brood-nest with no precaution whatever, and with never any fighting.

Giving Swarms Extra Room Below.—There is nothing very new in the idea of allowing a swarm to have an empty story under the brood-chamber for a few days, in order to prevent desertion, but it has perhaps not received the attention it deserves. R. Beuhne, Australasian Bee-Keeper, page 8, has this to say about it:

> "I find bees are more contented if allowed to hang in a cluster for a few days after being hived, instead of being divided by the intervening full sheets of foundation. Some swarms which I hived on full sheets or on drawn combs actually built combs for a few days from the bottom-bars of the frames down into the empty hive-body below before they commenced drawing the foundation or storing in the drawn combs.
>
> "For the average season I find the best plan is to hive swarms on clear drawn combs, with an empty body underneath, in which they can hang in a cluster. They may build a little comb on the bottom-bars of the frames, but this they will soon neglect. In a week or so I put a set of full sheets on top and withdraw the empty box from below. It is natural for bees to hang in a cluster for some days after swarming, and when given this opportunity they are less inclined to turn out; that is to say, swarm again within a few days, as they do some seasons."

Wisconsin Bee-Keepers' Association Meeting.—The 34th annual convention of the Wisconsin State Bee-Keepers' Association will be held at the Capitol Building, Madison, Wis., Dec. 17 and 18, 1912, beginning at 10 o'clock a.m., Tuesday the 17th.

As usual, an interesting program consisting of papers and questions will be presented for discussion.

Important legislation, to be presented to the next Legislature, will be discussed.

The Chicago-Northwestern Bee-Keepers' Association holds its annual convention in Chicago Dec. 19 and 20, thus giving all members an opportunity to attend both conventions at very little additional expense.

Headquarters for the bee-keepers will be at Simons' Hotel. To secure a room, write in advance enclosing $1.00.

Gus Dittmer, *Sec.*

Coal Cinders in Front of Hives.—Coal cinders are excellent for the surface soil of an apiary location. Cinders under the hives and in front of them keep the moisture away and prevent the growth of weeds. They also form a more solid foundation than earth.

Stings as a Means of Ascertaining Death.—The "Journal de la Santé" is quoted by L'Apiculteur as recommending bee-stings for ascertaining death in doubtful cases. They say that in case of death the sting shows no reaction whatever on the skin in the immediate vicinity. This looks plausible, but there are more positive ways of ascertaining death.

◆

The Picture Contest.—Our picture contest, which closed on the first of November, was an entire success in point of pictures received, and also as to the quality of the same. Over 200 pictures were entered by 85 different contestants. Our front cover for this month will show the picture which was awarded first prize by the judges.

The two men who judged the contest were Mr. E. J. Baxter, president of the Illinois State Bee-Keepers' Association, and Mr. H. M. Anschutz, of Keokuk, Iowa, acknowledged the best photographer in Iowa, and probably in the middle West. Prizes awarded were as follows:

First Prize — Edward F. Bigelow, Sound Beach, Conn.

Second Prize—Wesley Foster, Boulder, Colo.

Third Prize—J. F. Diemer, Liberty, Mo.

Fourth Prize—L. L. Ness, Morris, Ill.

Fifth Prize—B. F. Schmidt, N. Buena Vista, Iowa.

Other prizes were awarded to contestants in the order named below: F. E. Millen, Ontario; Chas. Kennard, Indiana; J. A. Nininger, Kansas; G. L. Sauer, Illinois; T. Yawata, Japan; H. Adams, New Mexico; F. F. George, Idaho; Ira D. Bartlett, Michigan; J. A. Green, Pennsylvania; J. A. Bucklew, Ohio; G. E. Morris, Vermont; K. Okushima, Japan; J. H. Berry, Oregon; T. C. Nall, Arkansas; J. S. Dean, New York; Mrs. Bertha Anthony, California; A. A. Augenstein, Illinois; W. C. Eastman, Ohio; J. B. Hollopeter, Pennsylvania; J. M. Butler, Idaho; S. R. Stewart, Colorado; Dr. J. M. Kleeber, Wisconsin.

◆

Weight of Sections.—1. When comb honey is quoted at 17 to 18 cents per pound, does that mean that a section is called a pound, or does it go by the actual weight?

2. If the actual weight is used, what does the commission man do in case a shipment is sent to him which has not been weighed before being sent?

3. What commission is charged?

These questions were referred to R. A. Burnett & Co., of Chicago, who give the following answers:

1. No, it does not mean that a section is called a pound, but the actual weight is used.

2. He weighs it, and also tests weights given by consignor.

3. Ten percent on consignments that are sold in less than car lots.

◆

Chicago-Northwestern Meeting.—The Chicago - Northwestern Bee-Keepers' Association will hold its annual meeting at the Great Northern Hotel, Room L., 38, Chicago, on Thursday and Friday, Dec. 19 and 20, 1912. The Great Northern Hotel is situated on the corner of Dearborn Street and Jackson Boulevard, and easily accessible from any railroad station.

As Chicago is a central point there should be a good meeting as in the past. Several of the noted bee-keepers have promised to be present, and as our meeting comes just after the Wisconsin meeting, a good delegation is expected from Wisconsin.

All bee-keepers are invited to attend.

L. C. Dadant, *Sec.*

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Colorado Meeting.—The annual convention of the Colorado State Bee-Keepers' Association will be held Dec. 12 and 13, in Denver, at the Auditorium Hotel, 14th and Stout Streets. The Auditorium Hotel will be headquarters for the Association. The rates are $1.00 a day and up. The hotel is new and centrally located. The management has placed the Pompeiian Room at our disposal; the same one as last year. Take Colfax car under viaduct at the Union Depot, and get off at 15th and Stout Streets, and walk one-half block west to the hotel.

Every session of the meeting will be a live one, and we hope for a large attendance. We will have an "auto session." This will be a hummer, as we are going to have the "auto" dealers show us their utility cars and their winning points.

The program has not been entirely arranged for at this date, but we will have worth-while sessions, every one.

Wesley Foster, *Sec.*

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Demonstrating Bees. — On another page will be found a contribution from Mr. F. E. Millen, of Ontario, a description of the demonstration of bees, which is very interesting, and which might well be imitated at fairs throughout the country. Mr. Millen is the man whose death we erroneously reported in our last number. He is taking his final year at the Ontario Agricultural College, specializing in biology, with a view of taking up bee-work in some definite form when he graduates next spring with the degree of B. S. Agriculture from the Toronto University, with which the College is affiliated.

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The Roswell Fair.—The Roswell (New Mex.) Morning News of Oct. 4, publishes a list of the winners at their Fair.

The local winners in bees, honey and wax are Ernest Nelson, J. W. E. Basham, R. B. Slease, Henry C. Barron, B. H. Crawford, A. J. Crawford, E. W. Marable.

This shows there were at least seven exhibitors; a larger number than in many a State Fair.

◆

A Tea Rose Which Produces Honey.—In L'Apiculteur it is reported that the rose bearing the name "Marie Van Houtten," a tea rose, yields honey, and that bees were seen licking the nectar between the stamens of its blossoms. They say that it produces as fully formed seeds as the wild rose. Might not the one be the cause of the other?

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Washington State Meeting.—On Jan. 8, 1913, the Washington State Bee-Keepers' Association will hold a two-days' convention in North Yakima, Wash. In all probability Mr. George W. York, president of the National, will attend. J. B. Ramage, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

The 1912 Season

As has been already mentioned, the season of 1912 was unusual. It may be well to give here the outcome of the season, and to mention some of the unusual items. In the first place, the heavy winter loss was something very unusual. In the fall of 1911, 114 colonies were put in the cellar, and only 64 were left to begin the season. A loss of nearly 44 percent is something Dr. Miller has not experienced in many a year. Sickness and death, practically in the family, in the fall, and Dr. Miller's sickness in the spring, may account in some part for it. But others in this region lost from 75 to 100 percent, and we had no occasion to complain with 56 percent of ours left.

The prospect looked pretty blue. No show of white clover, and feeding up to the last of June, and we felt we would be thankful if the bees would only get their winter supplies. But white clover seemed in some mysterious way to come from nothing, and now with an increase of 45 percent, nearly 6000 sections, and colonies heavily supplied for winter we are more than thankful.

After all supers were taken off the hives with their contents hefted, if a hive felt as if nailed to the ground, it was not even lifted, but passed by as safe. If there was the least bit of uncertainty about its weight it was weighed with the use of a spring balance, and if it weighed less than 50 pounds, combs of sealed honey were given to bring up the weight. In most cases this is heavier than necessary, but in case a hive is filled with old combs that are unusually heavy, or have an unusual stock of pollen it is none too heavy. Many of our colonies weigh 60 pounds or more.

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Absence of Brood in Sections

Among the peculiarities of the season of 1912, was the fact that in our crop of about 6000 sections, not a single section was found with pollen in it. Of course, it is not impossible that there may have been one or more cells partly filled with pollen, then filled out with honey and sealed over, so that the pollen would escape detection unless the sections were held up to the light, when a dark spot would be shown when one tried to look through; but it is not so very likely that there were any cases of this kind, for when pollen is present in sections there will almost surely be some of it left unsealed. We generally have very little trouble with pollen in sections, but an entire absence of that trouble is something decidedly unusual. Could it in any way be connected with the unusually late season, with the harvest beginning late in June?

Improving by Requeening

Perhaps in no other case does so great a responsibility rest upon so small an atom as the weight that rests upon the queen-bee. She has to answer for the good or bad qualities of the whole colony. If the bees are good honey-gatherers, if they are gentle, if they are non-swarmers, if they seal their honey with extra white cappings, etc., all these good qualities are credited to the queen. Also she has to answer for all the bad that is due the colony. If the bees are lazy, good for nothings, if they are regular little vixens as to temper, if they persist in swarming, swarming, swarming, if they seal their honey with greasy cappings, she is the one who is blamed, too. Is it right to lay all the blame on one small bee?

If she is a fine looking queen and a good layer, and yet the work of her colony is below the average, don't you hate to pinch her head? Don't you feel like pleading for her life, saying, "Oh, let's try her a little longer, may be she will do better next year?" Well, if you do, just steel your heart and bravely pinch her head, for she is surely the culprit, and it doesn't pay to keep poor stock when you can just as well have the best. If you have never tried weeding out your poor queens and breeding from your very best colonies, just try it, and see what a difference a few years will make in results.

Take the item of temper alone. One very cross colony will make the whole apiary appear cross, and it may take you some time to locate the real culprit, but once located lose no time in pinching the head off of the queen. Naturally you would not expect any improvement in the temper of the bees until the progeny of the old queen were all dead, and the new bees had taken their places. That would be nine weeks from the time the old queen was killed. The strange thing about it is you don't need to wait that long, at least not in all cases. This summer we had one exceedingly cross colony. We knew it was somewhere in the lower part of the apiary, but it took us some time to locate it. When we finally did locate it a new queen was given. We didn't have to wait nine weeks for an improvement in temper, for within a week after the new queen began laying we noticed a decided difference, and long before the new bees were old enough to fly, that colony appeared to be as good tempered as any in the apiary. Neither is this case solitary. In several other cases the same thing has been observed, and the conclusion seems to be almost irresistible that the queen in some mysterious way has an influence upon the progeny of her predecessor. It hardly seems a reasonable conclusion, but these are the facts.

An interesting query arises: If a queen from a cross colony should be given to a gentle colony, would the gentle bees turn cross?

SKETCHES OF BEEDOMITES

JOHN S. HARBISON.

Biography of the Largest Honey-Producer in the World

The following biography of the late John S. Harbison was kindly furnished to us by his daughter, Mrs. Hinkle, together with the picture which we reproduce herewith. She has our thanks for this kindness:

"John S. Harbison was born in 1826 in Beaver Co., Pa. He came to the Sacramento Valley in 1854. He found that many of the men who were raising food products were making more money than the average gold prospector. He worked for wages in Sacramento until he had enough money to start for himself. In 1857 he went back to Pennsylvania and prepared a shipment of honey-bees, consisting of 67 hives. These made the trip by way of New York, then via steamer to San Francisco and up the Sacramento River. On arrival he was offered over $100 per hive. At this time there were no bees west of the Rocky Mountains. In 1859 a second shipment of bees was made from Pennsylvania, also fruit and ornamental trees, and he established a nursery along the Sacramento River, two miles from the Capitol building. The year of the big flood, about 1863, his nursery and many of his bees were swept away, and he had to make a new start.

"He returned to New Castle, Pa., in 1865, and was married to Mary J. White, and brought her to California.

"In 1869 Mr. Harbison established apiaries in San Diego county, and moved to San Diego in 1874. He was then the largest honey-producer in the world, and won many silver and bronze trophies and diplomas for finest honey exhibited at the Centennial and other exhibitions and fairs.

"He patented the Harbison hive, which was used almost entirely in the West until the one-pound section boxes were introduced. He also published a book on bee-culture. The last years of his life he kept an apiary of 250 colonies, and also experimented on the grafting of English walnuts on to the native California stock, with great success.

"Four weeks before his death he attended a bee-keepers' convention at El Cajon, San Diego county, and urged them to consider the following: 'That San Diego is to have a Panama California Exposition in 1915, to celebrate the opening of the Panama Canal, and that this is the first American Port of Call on the Pacific; that the conditions in the grounds for the said Exposition are ideal in every way for the planting and maintenance of all honey-producing plants, and for the establishment of a model apiary in conjunction with the same.'

"He believed that by a judicious use of glass and wire-screen, this could be made one of the most attractive exhibits of the Exposition, and if carried out to show the old and new methods of handling bees and honey would be a splendid advertisement, and most instructive from every point of view, and he urged those at the convention to make such an exhibition, and to start the plantation of bee-flora at once.

"After attending this convention he sent three varieties of sage seed to the nurseries connected with the Exposition, that the plants might be ready to set out the coming year.

"Mr. Harbison died Oct. 12, 1912, at the age of 86 years and 13 days."

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

The Honey Market in October

The potato crop is reported to be one hundred million bushels above normal this year. The price has "gone to pieces" to such an extent that there is little profit to the grower. In many cases the crop will be a loss. But the cost of potatoes is down when the consumers are considered. The consumers are benefitted this year along with the dealers and shippers, while the growers lose. The apple crop is in a like condition, but from present indications it does not seem that the consumers are to get much advantage of cheap apples, and the growers are not getting much for their crop. The dealers and carriers get the big lumps there.

The rush of these two crops to market has engrossed the attention of the dealers to such an extent that they have not had time for honey; hence the slow sale of western comb honey in car lots. The larger part of this honey will probably be shipped before Nov. 15.

The market has dropped somewhat on comb honey, and $3.00 is the highest price that has been secured for No. 1 comb honey since early in the season. Somewhat lower prices may prevail before all the honey is moved, although there is not much more honey unsold.

COLORADO MOUNTAINS IN WINTER—THE SOURCE OF IRRIGATION WATER.

Wanted—A Queen-Breeder in Colorado

There is not now a queen-breeder in Colorado who makes a business of it. There are several bee-keepers who sell queens, but they are not soliciting business. The mailing of queens to Colorado from the South and East is a hazardous process. Many queens are lost. It takes three days from eastern Colorado. You may see what a queen is up against if she has already traveled from several days to a week before reaching the eastern Colorado line. I believe that there is a business for a queen-breeder here, that would keep him busy. The bee-keepers need to get queens within a day or two from the time they are mailed.

If a location could be found where queens could be reared as early as May, the breeder would prosper.

More About Moving Bees

In the September number I gave an account of a bee-keepers' week. Perhaps I should now tell how those smothered bees came out. Thirteen of of them were lost from the combs breaking down and drowning the bees as much as from smothering.

The Monday following the events I have told, we had the bee-meeting in Cortez, reported in the November American Bee Journal. The next day George and I started down the canyon again with a spring wagon after what bees we could haul. We reached the place where we had left them before sundown, and got the bees straightened up before dark. I placed the combs of the smothered colonies on top of the strong ones, first cleaning out the dead bees and broken combs. We loaded up the extra covers and bottoms and 22 colonies, leaving 11 with the extra bodies on top for extracted-honey production. We started about 6 o'clock and reached the ford of the McElmo River about noon.

A heavy rain had fallen some days before, and the river bed was changed somewhat, so we unhitched and rode the horses back and forth to find the best fording point. Then we hitched up again and began the fording. Upon reaching the homeward bank the rear wheels cut down into a sort of quicksand, and they settled down until the wagon bed was but a short distance above the water. We had started with a shovel, and it came in play here. A half hour's shoveling and removing branches and boulders so that the horses could have a good footing, we were ready to pull out. The rear wheels raised nearly two feet when the horses started, and had our team been at all unsteady we would have had serious difficulty.

We reached the apiary in good time, and had no overheating of the bees at all, as I had the supers, with section holders removed, on top, and wire-netting over that. Frequent sprinkling kept the bees contented.

Thursday, Aug. 1, was busy fixing up the bees and putting on supers, finishing the honey-house, etc. The cracks in the walls of the house I covered with lath, and those in the floor with tin strips. I covered the window with wire-screen. When I had the house ready I walked 3½ miles to George's place and we prepared to haul over my 450 supers, 150 hives, covers, bottoms, etc. We got this all done the next day, and I piled up all the supers and hives the following day, leaving room for my bunk and small work-table. I bought 27 colonies of a neighbor and moved them to the apiary and supered them. When the 11 colonies—still down in the canyon—are brought up I will have an apiary of 60 colonies. I secured 70 cases of honey from these bees, which is pretty good considering that the apiary was finally established after Aug. 1.

SOUTHERN BEEDOM~

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The True Value of the Honey-Bee

The writer has been engaged in various positions in which he was enabled to aid in spreading the knowledge of the true value of our little insects. It is of untold worth to any State, and the country at large, to emphasize the value of keeping a few colonies of bees on the many farms that are without them, both for the honey they gather as well as *the great aid they render in the pollenation of our fruit and other blossoms.* At the same time it is very important for us to educate the people that would keep bees to keep them in a proper manner, since we know the results caused by the bee-keeper who does not take care of a colony of bees in frame hives. Simply putting them in the most up-to-date hive and leaving them there to take care of themselves will never do.

So these things should be taught, and it is for the more experienced bee-keepers of the country to lend their aid in such educational work. Unless this is done, ignorant bee-keepers' will be quite a detriment to the honey-producer.

For this reason alone many bee-keepers would not advocate the keeping of bees on more farms, but there are many places where no large apiaries exist, and with the proper education of the farmers much good would result. I tried to emphasize the point fully in the following part of a chapter in Bulletin No. 24, on "Texas Bee-Keeping:"

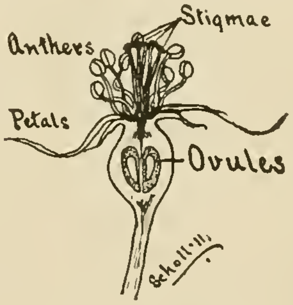
"A serious trouble and a great mistake of the majority of farmers is their neglect of these most important of their friends, the honey-bees. They should receive as good care as is given to anything else on the farm. Their value cannot be overestimated,

"It is not sufficiently understood that honey-bees were not only created for the purpose of furnishing mankind with delicious honey, but for another and much more important reason—that of fructifying the flowers visited by them so that it may be possible for these to bear fruit and seeds. The most of our host of plants absolutely require the visits of the honey-bees, or other insects, to carry pollen from one flower to another and thereby fertilize the blossoms. Pollen is gathered by bees from flowers for food, and carried to the hives in little bright-colored pellets on their hind legs. They must have pollen to prepare the partly-digested food with which the young larvæ are fed. Inability to secure sufficient pollen causes delay, or diminished progress of the colonies. Ordinarily but one kind of flower is visited on a trip when pollen is being gathered. In gathering either pollen or honey the bees come in contact with the pollen grains of the blossoms, which adhere to their hairy bodies.

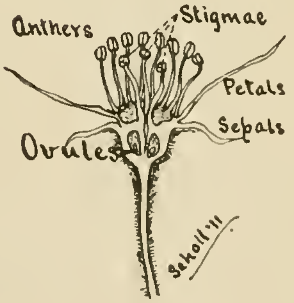
"In passing from flower to flower some of the pollen grains come in touch with the stigmas of each flower visited, which effects cross fertilization and a thorough setting of fruits and seeds. It is thus that the bees pay abundantly by their services for the treasures the nectar-yielding blossoms offer to them. The exceeding interdependence of flowers and insects and the vast necessity of this has long been recognized by horticulturists and other authorities.

"Honey-bees are the most important distributors of pollen of all insects because they appear in larger numbers, especially early in the season, and their greater activity makes them more useful in the work they help to perform. It is estimated that the value of honey-bees as pollen distributors is far greater to our country than the value of the crops of honey produced. We owe it to honey-bees that we have a larger quantity and better quality of fine fruit, vegetable and cereal crops than we would otherwise have. Of this there is not the least doubt. Since honey-bees are general pollen gatherers, appear in greater numbers, visit a far larger number of blossoms over a greater territory, and do this more thoroughly than any other insect, it is apparent that they are indeed most valuable friends to mankind.

"Plants or flowers have sex very similar to that in animals, and it is just as necessary that fertilization take place in these before fruit can be borne or seeds be developed. While both male and female sexes exist in the same flower of many plants, there are some plants in which the male sex exists in one and the female in another flower of the same plant, and in still others each sex is confined entirely to one plant. In any case it is necessary that the pollen grains from the anthers of the male part of one blossom reach the stigma of the female part of another where they enter into the ovules within the blossom and complete fertilization, after which the development into fruit or seed follows. Without the pollena-



Pear



Apple

WHERE THE ORCHARD PAYS.

tion of the blossom, fertilization cannot take place, and the blossom must wither and die instead of bearing fruit.

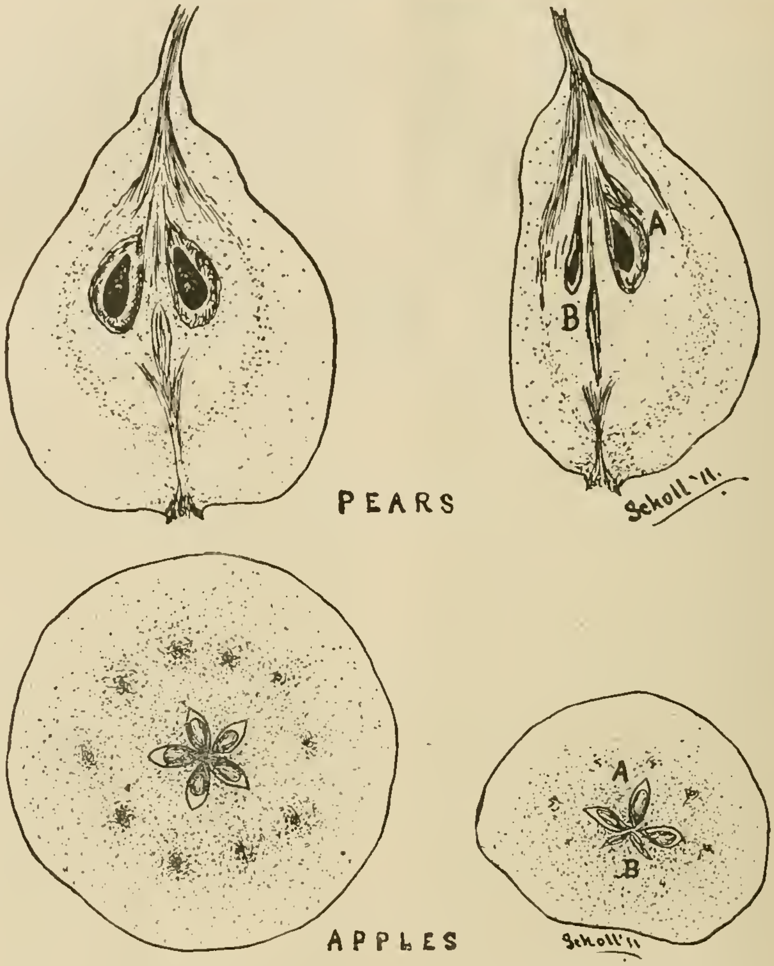
SOME STRIKING EXAMPLES.

"Where many varieties of trees are mixed in an orchard there is less trouble from the lack of proper pollenation if the weather is warm and dry, and the wind can carry the minute pollen grains from flower to flower; but even under these conditions visits of bees make the work more thorough. Such ideal conditions do not always exist. This is especially true where the period of bloom is a long one. It is during conditions not so perfect, when the weather is damp and the pollen is sticky and not so easily blown about that the journeying back and forth of the insects plays a conspicuous part in the production of harvests of fruit or seeds. It is also apparent that when certain varieties are isolated from others of their kind, or when the distance between them is great, or they are in a direction from each other that the wind cannot carry the pollen, the chances of pollenation are cut off, there is no setting of fruit. There have been instances where insects were not present, that the side of a tree from which the wind was blowing the pollen bore no fruit, while the other side yielded abundantly, showing how the bees might have aided. Careful investigation has demonstrated beyond a doubt where the agency of the honey-bee was not only essential, but absolutely necessary, to insure satisfactory crops.

"Darwin, the greatest naturalist, recognized, in his time, the value of the honey-bees as an important agent in relation to plants when he wisely said: 'No bees, no seed. No seed, no increase of the flower. The more seeds from the flower the more flowers from the seeds.' This he proved by extensive experiments, and others have done this many times after him. He found in one of his experiments the following results: "Twenty heads of white clover visited by bees produced 2990 seeds, while 20 heads so protected that bees could not visit them, produced *not one* seed.' The same kind of experiments have been made with strawberries and various other fruits. Fruit trees that were covered half way with netting, so so that the bees could not visit the flowers, bore fruit abundantly on the unprotected parts, but none at all, or very little, and that of a very inferior quality on the other.

MORE BEES, BETTER CROPS.

"This shows the importance of keeping a few colonies of bees on every farm. For the large commercial orchardists, or extensive growers of cucumbers, melons, and various other crops, this question is of more importance still. Where large orchards or fields are planted in solid blocks, or where there are a number close together, cross pollenation is not satisfactory on accound of the lack of sufficient insects to do the work properly, especially when the main part of the trees or plants are in bloom. Therefore, the keeping of honey-bees near them is to be encouraged, to increase the quantity as well as the quality of the crops.



PERFECT FERTILIZATION. IMPERFECT FERTILIZATION.

"In one instance the owner of a large orchard did not get any fruit from it for eight years, and was about to dig up the entire orchard. Being advised to try keeping honey-bees to fertilize the blossoms, he did so. The result was that he sold thousands of dollars worth of fruit thereafter. The idea of keeping bees in this case was mainly to fertilize the fruit blossoms. But the usual crop of honey yielded by them, aside from the beneficial service rendered, increases their value. Many other instances might be given."

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Exceptions in All Things, So With Uniting

That bees do nothing invariably is generally admitted by all who have handled them to any great extent, but every once in awhile they do something so utterly unorthodox as to surprise us even when we are looking for the unexpected to happen. In my experience with the "critters," I have done very little uniting in any form, always aiming to have nothing but strong colonies on hand *all* the time.

However, what little uniting we have had to do in the past was undertaken with the doubling up of a weaker colony on top and paper between the two stories. It has always worked to perfection, and I am *just sure* the plan would work under almost any conditions.

This fall quite a lot of requeening was done at the home yard, and late in October it was found that one real strong colony was queenless, and another one had a virgin that had not mated, owing no doubt to the long spell of wet, cloudy weather experienced at that time. From two different out-yards I brought as many weak colonies with good, young queens, and the next day, towards evening, I doubled them with the two colonies referred to.

Owing to the miserable weather at that time, after two or three examinations in an effort to locate that virgin queen, I became disgusted and decided to let them take their chance and double them with one of the weak colonies brought home. The colony that was queenless acted in the usual manner, and all united peaceably, the queen being noticed when I removed the combs out of the top story later on. As for the other colony with the virgin queen, they simply butchered every bee that was in the colony united with it. Both colonies were treated at the same time under exact conditions, but what a difference !

The fact of the virgin queen being present must explain the difference, but I will own that I *expected* the virgin to disappear and the fertile queen to be accepted in her place, and as for the fate of the bees being introduced, I was *sure* they would be all right. So much for expectation as compared with realization, and while I am not worrying much about the fate of the bees, I certainly would like to know why they were all killed in such a ruthless manner.

A Good Flight Before Winter

Monday, Nov. 11, the bees had a glorious flight, the day being warm and calm, with a slightly smoky horizon—typical of the weather commonly designated "Indian summer." No doubt many cellar winterers will place the bees in winter quarters just as soon as the weather turns cool again, as it is always advisable to take them in as soon as possible after they have had a good flight—any time after Nov. 10 in this latitude.

Bees wintering on the summer stands will also profit by the nice flight, although many of us, no doubt, would like to see them have another flight later in the month, or even the early part of December. Given a flight at that latter date, personally, I would just as soon see them shut in for three months without a flight, as experience has proven that with good stores a confinement of that length does no harm. Indeed, they are often without a flight four months and longer in this latitude; and, generally speaking, wintering is not to be dreaded even if those conditions prevail, provided the bees have an abundance of good stores, and have a good cleansing flight late in November.

Late Feeding

By the time these notes are in print, work with the bees for a few months will be a thing of the past. When the first snow comes, it is advisable to carefully look around the hives for the tracks of the deer mice who like to be domiciled for cold weather over the top of the bees, snugly wrapped in the nests made in the packing. If any are in evidence, and you find the hives they are in, instead of rousing up the colony too much in a chase after the mice, better quietly place a few traps in the packing and dispose of them in that way.

If for any reason some of the colonies have not been properly attended to in the matter of stores, they can still be looked after, although the work should have been done much earlier. For such late feeding as in December, candy properly made is the best if it can be had, but syrup made real thick can be fed on the pepper-box plan. A 10-pound tin honey-can, with the top perforated, and when filled with warm, thick syrup may be placed next to the bees, care being taken to see that lots of packing is placed around and over the pail, so as to prevent the escape of heat. In this way feed can be given to bees at almost any season, but please bear in mind I am not advocating such late attention, as with syrup fed very late, and the bees having no chance to fly for a long time after the disturbance, good wintering cannot be looked for in the majority of cases.

A Trip to Finland Would be Enjoyable

That article from Paul Mickwitz, page 341, was read with a sense of pleasure on my part, as we shall always remember the visit that friend Mickwitz made with us shortly before he left for his home in Finland. A trip to visit him in his northern home is one of the anticipated pleasures looked forward to when some of my rich relations leave this mundane sphere, so that it will be possible, from a financial standpoint, to take a vacation of that kind.

Ripening Honey Artificially

Talk about ripening honey "artificially." Surely, the past season should forever stop all public advocacy of such a method on this continent. I certainly would like to see the man and the method that could have improved honey by leaving it exposed to the open air during the months of July, August and September that have just passed.

By accident, a small vessel of honey was left open in the honey-house after we had finished extracting the clover honey. Although at the time of extracting this honey was very thick, I was amazed, on finding this small pail behind the extractor a few weeks later, to see that the honey was thin and the flavor entirely spoiled. I know a number who left large tanks of honey exposed for some time, and while they say it did not *spoil*, certainly there was no *improvement*, for the air was so charged with humidity during all the late summer that moisture was everywhere, no matter how dry the local surroundings.

Some may say this was an exceptional season, as no doubt it was, yet any plan that is sure to work disaster in *exceptional* seasons, and very apt to do the same in *ordinary* seasons in the hands of most bee-keepers, should not be advocated for *any* kind of season.

Those "Harmless Bees"

In regard to those "harmless" bees so much discussed in the last American Bee Journal, I notice that the editor of the Bee-Keepers' Gazette, published in Ireland, pokes a bit of good-natured fun at Mr. Burroughs' claims in connection with his alleged discovery. Editorially, he says among other good things, "By the way, no one, so far, has claimed to have heard bees laugh. We all have heard them cry, and many of us know what their rage is like. Can it be that they, poor things, are deprived of the pleasure of healthy laughter with so many provocations to merriment as mankind affords them? We hope not."

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Spring Management of Bees—A Word for Queen-Excluders

"FRIEND WILDER:—Agreeable to my promise that I would write my methods of operating with bees as soon as I could get them off to their fall location, I will now make the attempt.

"Our surplus honey flow comes from what is called here white tupelo. It usually begins to bloom about the middle of April, sometimes a little earlier, and on very rare occasions later. We only have it about three weeks, often not so long, so you see how important it is that we get our bees in the very "pink" of condition. Of course, we have some honey from other sources, but if the tupelo were taken out I don't believe any of us would attempt to keep bees in this immediate section.

"A number of years ago we used to have quite a lot of very nice honey, though very dark, from what is called snow-vine, but of late we have failed to harvest a sufficient amount of this grade of honey for the bees to winter on.

"Well, to begin with my plan, in January as a starting point, we assume that all the bees have been returned to their winter or spring location here at Wewahitchka, and we are now preparing to get them ready for the harvest. Usually during the beginning of this month we have maple, ironwood, and other plants or trees blooming, from which source bees, weather permitting, get quite a little honey and lots of pollen, and they begin rearing brood to a considerable extent.

"As they are wintered in two stories I examine the lower story about the middle of January, or as early as possible thereafter, taking record as to the strength, amount of brood and stores of each. Owing to cool weather we are very likely to excite robbing, and I endeavor to be careful, going very slowly, using little smoke, and picking up all pieces of comb, especially if with honey. I haven't had a case of robbing in my apiaries in 10 years, and

I attribute my success along that line, to being very careful about leaving wax, etc., around the apiary.

"By Feb. 10, I have gone over the apiary for the first time. This represents my individual work in apiary No. 1, which consists approximately of about 200 colonies, and this is the one to which I give my undivided attention. In our other two apiaries we have experienced men who work in about the same manner. We now begin work in earnest, as titi is about to bloom, and bees are getting down to business. I now make the second visit over the apiary. This time, where bees are in a normal condition, we find from two to three frames of brood.

"All colonies having as many as four frames of brood, and a corresponding number of bees, I spread the brood; that is, I open the brood in the center and place an empty comb, or, better, a comb partly filled with honey in the space thus made. Before going further, for fear that I may get some inexperienced brother in trouble, let me say that in case the comb contains honey, it should be brought to the brood-nest from some other part of this hive; or, if from the honey-house, it should not be placed there unless it is very late in the afternoon, and after the bees have about stopped flying for the day, otherwise you might start robbing; thus handicapping you very materially with your work. I would not advise a novice to begin this kind of work too early in the season. I deem it very necessary to be careful; if not, you are likely to do a great deal more harm than good by making the brood-nest too large for the bees to properly cover, as we are apt to have cold snaps at this season of the year, and the brood that the colony already has may be chilled or killed outright, if the thing is overdone.

"I go over the apiary speading brood only where I find the colonies of sufficient strength to permit it; say where they have as much as four frames of brood and bees in proportion. At this season, in an apiary of 200 colonies, you will probably find two-thirds of them in a condition to warrant this spreading. Having made a record of the strength of each colony in going through them the first time, I can judge by that, and by the way the colony is working, whether they will be able to have their brood spread, and I am saved opening every hive. I will have finished the second visit by the first of March, or near that date. By this time the bees, if the weather and other conditions have been propitious, are gaining strength right along, and in a very short time, say by the 10th, they will begin swarming.

"However, I do not wait for this, but go right back over the same ground, giving two instead of one empty comb in the center of the brood-nest, and opening some that were passed over on the last trip, many of which I find of sufficient strength to take one frame of empty comb. In some instances I find it necessary to raise one or more frames of brood to the super. Black tupelo, black gum, and several other trees, among which I will mention the range, are now opening, and I am kept busy. Here is the time for what I consider my most profitable work of the entire season.

"I number the *location* of each hive, *not the hive*, and as all of my queens have their wings clipped, when a swarm issues I catch and cage the queen, then, move the parent colony to one side and place there a new brood-chamber filled with combs or foundation, then place an excluder on, and set the super from the parent colony over it. I now place the caged queen at the entrance of the new hive, and after putting a cover over the parent colony I go on with my work. After awhile, the swarm having found that their queen had failed to accompany them, begins to come back. I go and liberate the queen and let her go in, then I brush all of the remaining bees from the parent colony in front of their old location, and as I have an alighting-board in front of each colony, they all go at once into the hive, and I take the brood from which I have brushed the bees, and give assistance to the colonies that are too weak to spread their brood, being careful not to give any to those that are not numerically strong enough to take care of it.

"Sometimes I can give a colony only a frame, and have to go back a number of times, repeating it until by this method I get it up to the standard. Later on, say a week or more afterwards, I help out these swarms; otherwise by the time tupelo begins to open they will have become depopulated, and will not do anything toward harvesting a crop. You now see why it is best for me to number locations instead of hives, as I would have everything confused, and no uniformity in the apiary. But I have not stopped the spreading of brood, and I continue to do this until tupelo is well open, and I never use any of my swarms to make increase until this time, for I consider brood judiciously divided among the weak colonies in the apiary to be the most profitable work that I do.

"As I have from 3 to 16 swarms in a day, when swarming is at its best, I am able to get every colony in the apiary in prime condition by the time tupelo is well open. You must remember that this bloom only stays with us for something like three weeks, and often not so long.

"I use a 9-frame hive; its dimensions are standard except in width, and this is 13 inches, inside measurement. I use 9 frames in the lower story or brood-chamber, and 8 in the super. I believe this size is most convenient. It is large enough for the best flows, and not too large in a light flow to discourage the bees; it is a compromise between the 8 and 10 frame hives, but with an extra prolific queen the brood-chamber isn't large enough to accommodate her, and it may be necessary to raise some of the brood from below to the super. Unless the time for extracting is at least 10 days off, I am careful to raise only capped brood, otherwise I would fail in carrying out my idea of sanitation in honey.

"Let me here digress long enough to say that I don't believe a pure article of honey can be harvested unless queen-excluders are used in working for extracted honey, for two-thirds or more of the fermentation in honey is caused by uncapped brood which is thrown into the honey in the process of extracting, thereby becoming a part of it, and truly an unsanitary part. I use queen-excluders on all colonies operated, or caused to be operated by me.

"Friend Wilder, were you ever present during the time of extracting honey in an apiary, where there were no queen-excluders used? If so, it is unnecessary for me to tell you of the filth, as you know much of the uncapped brood is thrown out; but if you have never witnessed such a sight, I would advise you to do so in order that you may truly appreciate honey that is taken from above queen-excluders. I believe that any one who is familiar with operating with or without queen-excluders would be willing to give from one to two cents a pound more for honey taken from above queen-excluders."

Wewahitchka, Fla. J. K. ISBELL.

Bee-Keeping—Salary

DEAR MR. WILDER:—How much honey did you produce this year and from how many colonies? Can a young man who understands the business make as much in producing honey as he would from a $1500 yearly salary? F. W. MORGAN.

De Land, Ills.

My season's honey crop was 125,000 pounds of chunk, extracted and comb honey from 2000 colonies, or an average of a little better than 60 pounds. Your present salary is much larger than any extensive bee-keeper could afford to give you to look after his bee interests. To establish yourself in a bee-business, the returns of which would be as large as your present salary, would require some time, and not less than a $3000 investment, even if you were to buy out an already established business. It would take, in a similar location to mine, 600 colonies, the returns of which might amount to $1500, and you could do all the work; and perhaps you would have more leisure than you have now. But you would have to make the investment.

Wants a "Shove Off"

DEAR MR. WILDER:—A friend bee-keeper gave me your address and told me to write you, that you would give me a good *shove off*. I am a young man and a farmer, and have 5 strong colnnies of bees, and I love them next to my family. I want to learn more about bee-culture, and make increase until we have enough bees to support us. Help me all you can now and I will make you glad later. J. W. GARNES.

Felton, Ga.

This young man is not far from where I was once in bee-culture. I had a great love for it, and a determination to succeed, and this is the secret of my success. I was not a very strong man in intellect, however I had a natural love for the culture of bees, and enough determination to succeed. A man with "willing hands" and deep interest in his business doesn't need much of a *shove off*. He needs only to know whether there is any money "at the other end of the rope."

Any man can be sidetracked in almost any line of business, and especially in bee-keeping. All of my friends came to me when it was generally known that I had "thrown up" my good job as head mechanic for a large concern for the purpose of embarking upon extensive bee-keeping, and begged me to give up my idea and go back to the shop to work or to enter some other line of business where the opportunities were great. Even my wife joined with them, and said my mind was a little overbalanced, but none of these things moved me, and no regrets have followed except that I wished I had started sooner.

I mention these things for no other purpose than to show to what extent a person must be determined on a pursuit if he expects to succeed.

The Partridge-Pea as a Honey-Plant

The picture shown here is a snapshot taken by the writer while visiting bee-keepers, and shows the partridge-pea growing in all its glory. It shows how it grows on the mountains in Dixie. There are two well-known species of partridge-pea. One that grows on low, damp land where the water stands near the surface. It grows mostly in sections where there are lakes and along the coast, and is distinguished from the other by its ragged leaves, and it does not grow as tall.

Where the Partridge-Pea Grows Rank.

This species does not secrete nectar, while the other plant grows from 18 inches to 5 feet, and on higher land, and is perhaps the greatest nectar-yielding plant known. The plant blooms profusely, but does not yield its nectar through its bloom, but through nectar-cells at the bases of its leaves. Here it collects in drops and runs down to the ground during the night or damp, cloudy days.

The greatest mystery about this plant is why the bees do not gather more honey from it, as it yields so heavily, and the duration is so long, about 100 days. But the bees do store from one to three supers during its flow of very fine, light honey. The flow begins in June and lasts until about the first of October.

The point I want to make is that a very large section of Dixie would be almost a desert so far as bee-keeping is concerned were it not for this plant. It grows out over the forest and uncultivated land in the poorest sections of our country; thus making bee-keeping possible even in seemingly the most unfavorable sections. It is not always a sure "hit" for its honey, but by taking several seasons in succession it makes bee-keeping profitable. Then, too, there are two other minor honey-plants which grow on the same kind of soil, and these very often give a yield of nectar that makes up fully for the partridge-pea during its off seasons.

CONTRIBUTED ARTICLES~

Improving the Bee

BY ARTHUR C. MILLER.

Now, what do you think of a man wanting to improve the bee? Why, all one has to do is to decide what kind of a bee one wants, and pick it out. If one is wanted that is kind, tractable, quiet in harness, won't kick, bite, or balk, select the Carniolans. They are neat in their habits, do not daub up their hive with propolis, and build paper-white combs. To be sure, their coat is but a somber black, trimmed with soft, gray fur, not striking, but good and serviceable.

Or, if one wants a similar bee, but one that properly guards its doors, just take the Caucasians. Regular gummers, these fellows, and one might, perhaps, do well to keep them for the business of raising varnish gum—though he might have to dynamite his hives to get the gum out.

Or, mayhap, one prefers a thing of beauty, the glitter of near gold, and therefore picks the sparkling goldens. Nice, playful fellows, these, and one needs a fine quality of sheet steel armor with them, for they are prone to be very rough in their play. But they are mighty nice to use when there are other bee-keepers around you, for as sneak thieves, they are far and away ahead of anything yet invented, and will pack their hives while those of the neighbors grow beautifully light.

If none of these suit, take some of the old standby, leather-colored Italians. Nice, steady fellows, who mind their own business and do not consort with the festive bee-moth. And if you get the right strain, you will have good, heavy supers and a lame back. We will not mention the sprained fingers and wrists from trying to shake these fellows from the combs, nor will we say a word about the way they perforate cappings when we try to take off the sections.

You, who would specialize on comb honey can pick out the good, old blacks, the bee that gran'ther used to keep. They shake off so easily; in fact, they fairly tumble over each other and you, in their anxiety to get off of the combs. It is real sport to find their queen, when one has not another blessed thing to do for a whole, long week.

And yet there are those who assert that the honey-bee is not variable, that she is unchanged and unchangeable. There rises to the mind's eye two apiaries which it might profit the persons who hold that view to visit. Both lots are Italians, and beauties, too, well cared for and well handled. The first lot can be handled at any season in any weather, flow or no flow, with scarcely a vestige of smoke. An ideal lot, assuredly.

The bees of the second lot are most excellent workers, but the Old Nick himself couldn't stand their heat. They meet you far from home, and escort you most attentively. Blow smoke in at the entrance and there rush forth myriads of the ugliest stingers man ever met, and no skill, no method, serves to subdue them. And in the face of this some persons would still have you believe that the honey-bee is not variable.

In color, in habit, and in behavior, the honey-bees vary as much as most kinds of animals and plants. Some of the traits of some races, and other traits of other races, are of advantage to us. If, by crossing and selecting, we can combine and fix the desirable characters, and eliminate the undesirable, we "improve the bee." And there is just as much possibility of doing this with bees as with other animals.

It is not a question of creating a new organ, or of radically changing the size or shape of the bee, but a question of combining all the good traits and leaving out the bad.

We speak of good honey-gatherers as if such bees possessed physical characteristics which were responsible for their work. It is more probable that the good results are due rather to a nervous energy. That some races are better honey-producers than others is pretty well known, and is evidenced by the widespread use of the Italians instead of blacks, Carniolans, etc.

That some strains of the same race are superior to others in honey getting is disputed, and superior results are attributed to "manipulation" or "management." In the opinion of the writer this view is erroneous, and his opinion is based on many years of careful observation and comparison. In support of this contention, I would cite my system of bee-keeping and the results. With few exceptions, all colonies are requeened in August of each year with queens which have just begun to lay. This ensures uniformity of colonies the following season. The occasional colony which may be below normal size in August is brought up to the average when the queen is put in, so that all start evenly. The following spring, save for a cursory examination at the entrance and across the tops of frames, the bees are not manipulated—they don't have to be. Supers are put on before fruit bloom, and the bees left to go it alone, save for getting honey off and putting on more supers.

With such a uniform start, and such a "let alone" management, every colony shows what it is good for. To be sure, whenever the hives are close together considerable mixing of bees occurs during a good flow, but not enough to materially affect the results. Under the above conditions, when all colonies of a certain strain, regularly on every flow, show greater amount stored than any other strain, we must assume that they are superior workers to the rest. And when this occurs, season after season, the assumption becomes a certainty.

I chance to have in one apiary three strains of bees, and several colonies headed by daughters of one of these strains mated to still another strain. One strain is especially commended for vigor and hardiness, another for gentleness, and the third for wonderful work, and the daughters referred to are from this latter. Every colony of this strain, and of these daughters also, has kept well ahead of the others. Is it not right to consider them superior honey gatherers?

Granting that bees can be "improved," the objection is made that few bee-keepers are so located that they can get pure matings, and, furthermore, that because the individual male cannot be selected, progress is impossible, or, at best, uncertain. Results belie this. Some bee-keepers have achieved marked results in the work of their bees, others in gentleness, and others in color.

It was the settled conviction of the late Henry Alley that queens mate within a very few rods of their hive, and that it is the drones that wander afar. My own experience supports this view, and, furthermore, I believe that the flight of the drones is largely controlled by the prevailing winds and the contour of the country.

One apiary which I maintained for over 20 years lay close to the west shore of a large sheet of water. The prevailing winds were southwest. Black bees were abundant one-half mile north. No bees west or southwest, and a few a mile due south. Year after year I reared queens there, and mismating was so exceedingly rare that when it did occur it was a genuine surprise.

A Practical Demonstration at Toronto.

So mobile is the bee in my hands that I have gone about the work of building up a series of apiaries of different strains with as much confidence as if I were handling cattle.

F. E. Millen Pointing Out the Dreaded European Foul Brood to Two Young Lady Bee-Keepers—Symptoms and Treatment are Always Fully Explained.

It may be asked why I care for several strains? I want pure stock for crossing, and also I want to try out pure stock of my own rearing on the different fields, as I have a notion that some strains are better than others on certain flowers. I may be wrong, but I propose to find out.

I have no bees or queens to sell, for if I produce any "infant prodigies" in the bee-line, I do not want them to cause worry and loss of sleep to those who doubt. But it's well to be "from Missouri" sometimes.

Providence, R. I.

Demonstrating Bees at Exhibitions

BY F. E. MILLEN.

One of the portions of the Apiarian exhibit at the Canadian National Exhibit, held at Toronto a short time ago, was the demonstration of the handling of live bees which was conducted by the Ontario Agricultural College authorities.

A large screen cage for the purpose was built, and a colony of bees provided for the demonstrator, in order that he might show what could be done.

The interest of the spectators was plainly evident, and to the uninitiated it seemed miraculous that a man could handle so many thousands of bees and not get stung. Many of the people wanted to know how they were tamed, or how the stings were taken away from the bees; another would ask what we put on our arms, etc.

Sensational methods were discarded, such as appearing half-naked; our aim was to show people that any one with a sufficient interest and courage can handle bees without getting too badly stung. Interesting points of the life of the bee and work of the bees were explained, and their usefulness demonstrated.

At every demonstration we drew a crowd of from 50 to 100 people, and many enquiries were made as to keeping bees both as a hobby and as a business.

Guelph, Ont.

Queen-Rearing Pointers

BY FRANK F. FRANCE.

Is not the subject of bee-keeping like a game of checkers? Are there not certain moves to make to get to the king row? I would say yes in both cases. The first and best move to make is to provide each colony with a good, young, laying queen. A queen that does good work is one that produces a hive full of bees that *work.* I once had a queen, and one of a high type of breeding, that produced a strong colony, but her bees did not secure more than enough honey—the whole summer long—to live on, while colonies all around her filled three and four supers. Such a queen should be killed at once, even though she appeared good.

There is a great study before us when we work out and compare the lives of different queens. There is as much difference in the personality of bees as there is in people. It is wonderful to watch half a dozen colonies and observe their differences and likenesses.

One of the most important features is to have your queens as nearly alike as possible, both as to breed and age by securing them from some reliable breeder. Breeding queens should be changed every year to secure the best results.

I have been asked by many bee-keepers to explain some of the methods I use in queen-rearing; also to explain how I use a little device to do away with a large share of queen book-keeping. This device, as pictured here, is the invention of Mr. H. Perkins, of Artesia, Calif., and is the best device I have yet seen to do the work required.

To begin with, I secure good breeding queens from excellent stock, and if they come up to my standard as good layers, with well-marked bees that *work,* such are used for breeders. By importing new stock and changing breeders every year, and also testing them for honey gathering, I have stock that is worth while.

As the temperature here in the North is generally cold, I do not begin my cell building until the latter part of May or the first of June, when drones are plenty and there is little dandelion honey coming in. From this time on until the middle of August I put out cells on the average every other day, but in the height of the flow I put out cells every day.

To produce the best, long-lived queens that bring results, larvæ not more than 24 hours old must be used for starting cells. All cells are raised in full colonies under the swarming or supersedure impulse. These cell-builders are made extra strong with brood from other colonies, so that there is an over supply of nurse-bees that will thus provide the proper amount of royal jelly for each cell. All colonies and nuclei are fed to imitate a good honey-flow (if there be none); about half a quart of feed in the evening of each day. The best results cannot be expected unless this is done.

The subject of the proper sized nucleus here in the North is of great importance. During the earliest and latest periods of the year I use a common 10-frame super with three tight division-boards and a super, thus making four (two-full-Langstroth) frame nuclei, each division having a separate entrance and cover. The entrances are so arranged as to have one on each side and end. Over all is placed a full cover. Figure No. 1 will illustrate this point more fully.

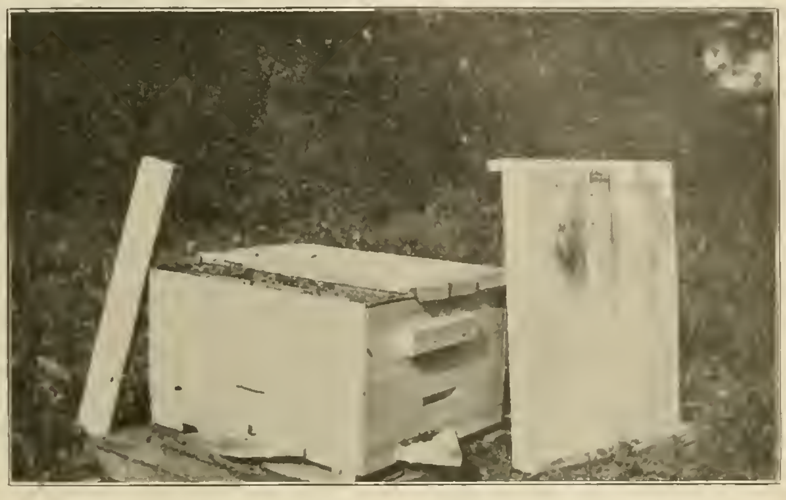


Fig. 1.—Regular Super Arranged to Make Four Two-Frame Nuclei.

As the season advances and the weather becomes warm and settled, I use a twin nucleus hive. This hive is made on the same principle as the Root twin hive, only the frames are made one-half a standard frame instead of one-third. I have a great many more bees to keep the brood warm, a larger space for the queen to lay in, and I have less swarming. The division-board is made of plate tin with an oilcloth fastened to the top to overlap each side. Over all is placed a telescope cover.

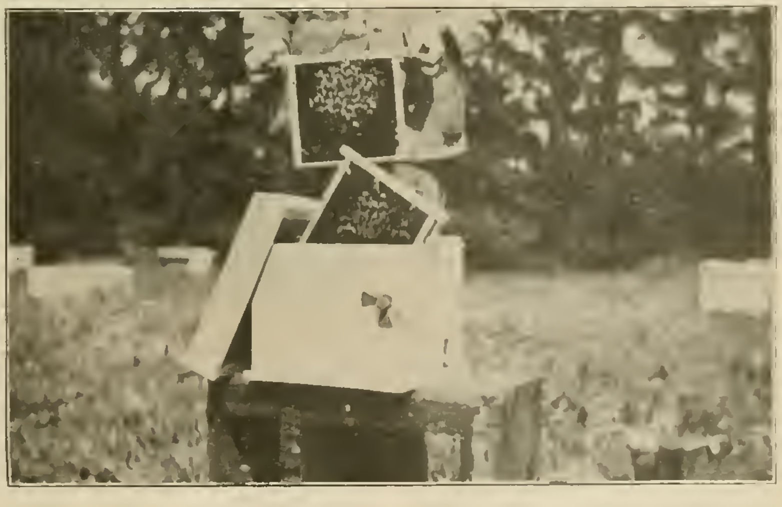


Fig. 2.—View Showing Side of Frames.

Fig. 4, next page, will show how the frames fit in a standard frame, and can be used as such if need be, also for the purpose of drawing out extra comb for more nuclei.

One of the most important features of queen-rearing is the book-keeping, especially if a record is kept of each individual nucleus. The little device shown Fig. 2, is used to do away with a part of this work. It is made of tin, with a small knob to turn each wing out as desired. Each wing of the signal is painted a different color, as red, white and blue. In connection with the signal I use a small piece of cardboard tacked on the side of the hive numbered in a half circle as this: 1, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 with a wire bent to point to any one figure or to any third day in the month. For instance, suppose the signal indicates that there is a virgin (the white wing), and the hand points to 15, it would mean look for a layer the 15th, when the signal can be turned to the red, meaning laying. The blue indicates a cell. After the queen has begun to lay the entrance queen-excluder is pushed down over the entrance, thus holding her in case of swarming.

Platteville, Wis.

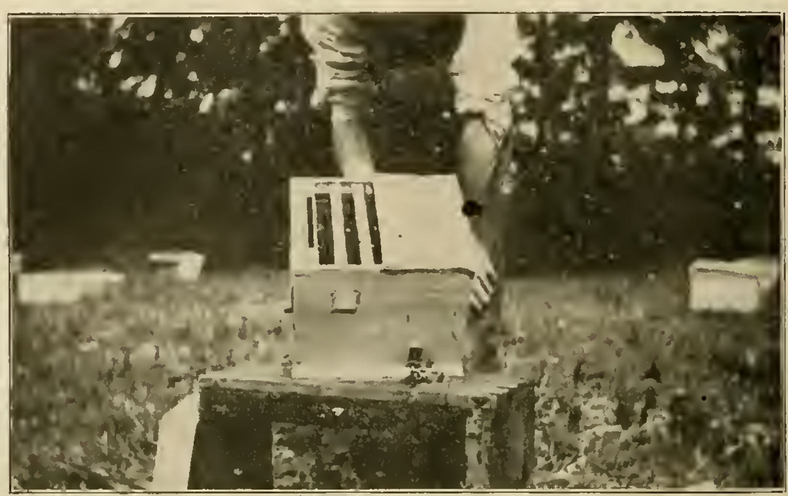


FIG. 3.—THE CONSTUCTION OF THE HIVE, FEEDER, FRAME, ETC.—(See page 371.

Improvement in Bees

BY E. S. MILES.

Referring to the discussion of improvement in bees, I cannot see how a man who believes an improvement possible can be compared, by Dr. Bonney, with those who believe in "the divine right of kings" or "the divine right of slavery." I would, on the contrary, put the one who says that it can't be done along with those who said that slavery or monarchy could not be abolished.

Because the Doctor has failed to pick out a queen whose progeny would be like her, he should not conclude that others cannot. It takes close observation to determine that a certain colony has the qualities we want in a sufficient degree to warrant the belief that they will transmit the same to their progeny if properly mated. I cannot see how learning the different theories of breeding could help a man in the breeding of animals unless he had this ability to pick out the ones having the traits wanted in sufficient degree to perpetuate said traits. The argument that a colony will produce a large crop one season and be worthless the next only shows that the Doctor has taken his experience with mixed bees. With that kind I have the same experience, and that is just what I want to avoid by selective breeding.

I want a bee which is thrifty, can accumulate a little when the common bee cannot; for such a colony will give some surplus almost, if not every year. That is why I mentioned a colony, No. 16, which never fails to pay me something because they have that very thrifty disposition.

They do not boom up, make preparations for swarming as most common bees do (bred by themselves under this impulse), but they are always on the lookout for nectar, and when the flow does come they are always ready, and seem to bend all their energy to storing honey instead of swarming. The Doctor claims that these bees won't perpetuate their kind, because they are "wild by nature." I cannot see why my No. 16 is any wilder by nature than my Duroc Jersey hogs. In 10 years they have stayed in this same hive, superseded their queen three times, and have never been out of the hive in that time except in quest of stores. They are always there. I know where to find them, and my hogs have to be kept at home by *fences*. If I neglected my hogs, as some neglect their bees, I would soon have hogs "wild by nature."

With such arguments as the Doctor uses on page 272, of the September American Bee Journal: "While we always have had the bee just as it is now, and especially that branch known as the *Apis* family, we can trace the development of some of the domesticated animals through the ages, as the horse, for we find the bones of the original Equus fossilized in the rocks," there is not much chance to get at the truth, for that is just a guess. It matters not how learned a man said this. I assert that such statements are just plain *guesses*.

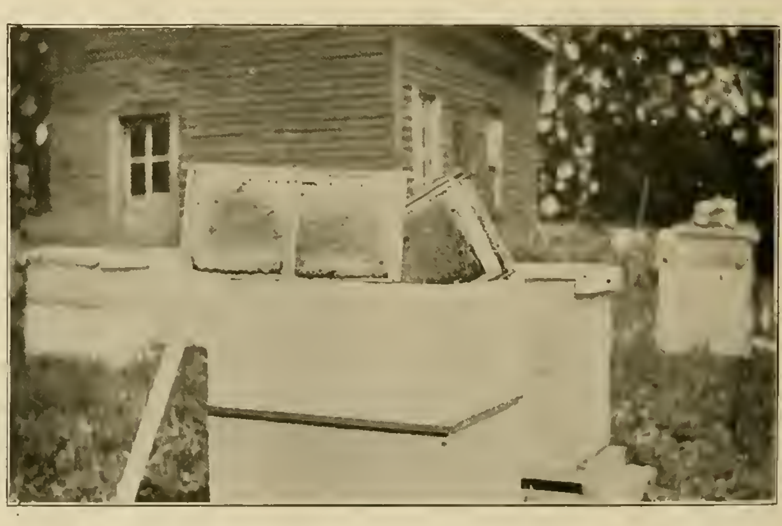


FIG. 4.—THE NUCLEUS FRAMES FIT A STANDARD FRAME.—(See page 371.)

We do not know what the bee was 5000 years ago, as to color or habits of industry or swarming, etc., but we *do know* that there is a great variation now between different colonies as to hardiness, gentleness, industry, and tendency toward swarming. It may be the Doctor expects too much in the way of improvement; it may be he expects us to have bees as large as robins, and able to carry a half pound of nectar at a trip. Improvement in bees doubtless will come, as in other animals, gradually.

He says: "I do not deny that it is possible." If it is possible, then it can be done. He quotes several men who admit their ignorance as to whether there are improved bees, yet he discredits those of us who claim to have accomplished some improvement, as "a few men, and some professional queen-rearers claim much, but I defer vastly more to the opinion of professional bee-keepers." Who are professional bee-keepers? The late Mr. Hutchinson, generally admitted to be one of the most advanced bee-keepers in the world, advertised for years a "superior stock" of bees. Are Dr. Miller, Mr. Doolittle, or Mr. Howe "professional bee-keepers?" They believe it possible and profitable to improve the bee by careful selective breeding.

Practically every one who has tried intelligently to breed from the best stock believes it easily possible to have a strain of bees superior to common bees.

"Management," as the Doctor thinks, is a whole lot, but not, as he infers, the whole thing; else why could he not have like results every year? Cannot one "manage" a colony the same every year? But suppose one strain yields one-third or more surplus with the *same* management than another strain, and does it year after year? Is not that an improved bee as compared with the other? Our improved live stock give more flesh or milk, as the case may be, for the like amount of feed than do the "scrub" stock;" hence they are an "improvement" over the scrub stock.

Such colonies as produce regularly more bees than are secured by natural selection *are improved bees*. I believe "like will produce like" in bees as much as in other things. They claim that we cannot control the male parentage. But we do not fully understand the question of mating. On page 274, Mr. F. W. L. Sladen says "the difficulties of mating might be overcome by isolation, but this cannot be done in settled districts," just where we wish to test for honey-gathering. I believe Mr. Sladen is mistaken in this. I believe there are neighborhoods where a bee-keeper has the field so completely to himself that if he will rear drones from the best stock only he will in the great majority of cases have his queens properly mated.

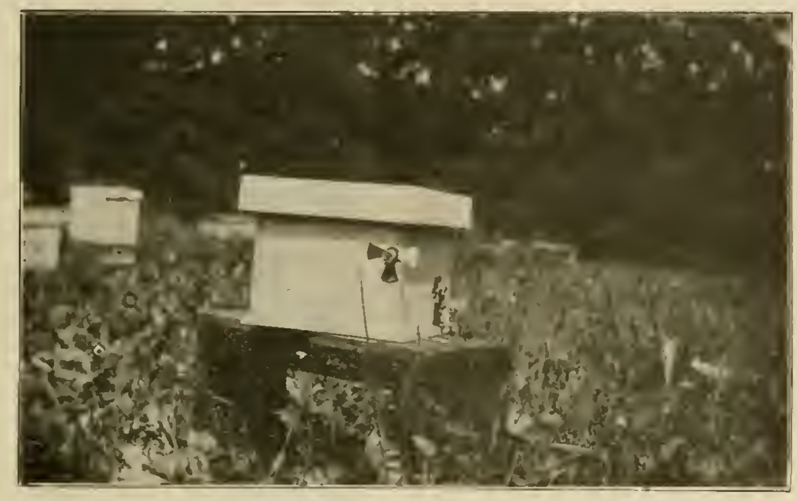


FIG. 5—HOW THE SIGNAL AND NUMBER CARD LOOKS.—(See page 371.)

I am not a believer in the theory that young queens go several miles to mate. In fair to large apiaries the young queens certainly mate not far from their hive. The breeder, therefore, can control the male parentage by furnishing *all*, or near all, of the right kind of drones, and *none*, or as near none as possible of poor stock. Allow me to give my own personal experience. "Seeing is believing." What one *sees*, what one *handles*, is the thing one really knows, if one knows anything.

Beginning with one good queen 15 or 16 years ago I selected colonies with queens as near like her as I could get for breeders. And in spite of the fact that I have kept some common stock which furnished drones all the time, I have quite a number of colonies that are superior as to honey-gathering and non-swarming to bees bred from natural swarming. For six seasons I have depended for my sole support upon the bees, and as I did not have enough colonies of this strain, I have yielded to the temptation to keep over some of the best colonies of the common bees that I should have requeened.

I have, however, gained control of my neighborhood by purchasing most of the bees around here, and still hope to increase my stock of selected bees. I am not trying to advertise, and have no bees or queens for sale.

I notice where bee-keepers are behind the times, and use the old-fashioned way of increase by natural swarming, that their neighbors generally have bees, if they want them enough to hive swarms. With this condition one cannot breed bees, as, of course, the field will be stocked with all kinds of bees except the best.

I have kept bees 18 years, and my neighborhood gets freer from other bees the longer I stay in one place. I aim to keep the field stocked with *rustlers*, and the other fellow must either keep better *rustlers* or take better care of them.

In conclusion, let me report 5½ tons of honey for the past season from 200 colonies, and an increase of 50 colonies. The Doctor, located near by, reports the season a "perfect failure." They say "money talks." *Honey* is *nearly* as good as money now-a-days.

Dunlap, Iowa.

Advertising Honey

BY A. F. BONNEY.

I have no hesitation in confessing that I was once caught by the fine advertising of a Correspondence School, and parted with some of my good money to take a course in Ad Writing. Had I had robust health I think I would be at it yet, for I soon had a position paying $115 per month.

This is my excuse for writing about selling and advertising honey, for I have had good success in disposing of honey, as well as other goods—by advertising.

I shall start with the proposition that advertising is guess work, for no man alive can tell the result, the *drawing power* of an ad, until after he has been permanently separated from his coin. His answers may cost him 10 cents each; they may cost him twice what the article is worth that he is trying to sell, or twice the retail selling price, if that be so much as one dollar, and yet it may be a "good" ad; that is, it may be well written, properly arranged and displayed, and in the proper mediums, but some way does not *draw*, and the venture is a failure.

A writer suggested that the bee-men of the United States raise a fund to advertise honey. It will never be done, because it is not a practical scheme. It would cost too much. Fifty thousand dollars would not be a start; *I* mean $50,000 a year, while I opine Mr. Foster had a simple sum of that amount in mind when he wrote about it. I like Mr. Foster's writings. He is practical, sensible, entertaining, but in this one case his hope had run away with his judgment. The sum will never be raised; for while there are many who would cheerfully subscribe one, two, or even ten dollars for each ton of honey they produce, they know that a few persons only would have to pay all the tax, and to invest under such circumstances would not be good judgment. While it might be tried once, I doubt seriously if they could ever get together another fund, unless such advertising were vastly more productive of results, *immediate* results, than my judgment tells me it would be.

If the scheme were practical, the first question would be, "Where shall we advertise?" and the answer would be (selfish interest), "In my locality, or where *I* may benefit." Mr. Foster would want some of it. I should like to see some of the money applied here. California bee-men would naturally look out for their interests, and that miserable little $50,000 would look like a pound of honey set in the midst of a hundred hives when a drouth is on.

The real good magazines, the *big* ones, like The Ladies' Home Journal, get hundreds of dollars for each page that they print. I have been told that this particular publication gets $1000 a page a month. Even with their tremendous circulation they reach but about one percent of our great population. This is but one of thousands of publications issued in the United States. Fifty thousand dollars would not put a small ad in enough of them to reach one-fourth of the population of the country *once*.

If we had the money to make an aggressive campaign, I doubt seriously if it would pay, *because we have nothing startlingly new or novel* to exploit; because we have not a sufficient margin of profits between the cost of production and the selling price. With the money invested and the time employed, the bee-man who receives $1000 a year for his honey has little to spare for advertising.

This brings me logically to the things advertised in the papers and magazines, their cost (probable), and the selling price, retail (known). Let us take the first breakfast food put on the market, if my memory serves me. They have the public so into the habit of buying it that they do not now hesitate to tell that it is made of corn, wheat, rye, etc., ground, made into cakes, baked, then broken up and roasted. There is a little sugar in it, a little salt, but if you try to eat it without the sugar and cream recommended—well, don't.

The manufacturers of this dope make great claims for it, and that, among others, it improves the nerves. I believe it, and that the manufacturers eat largely of it, else they could never make the claims they do. Let us analyze it. The average cost of the cereals, as they buy, is far below *one cent* a pound. But let us allow that small sum, then another to cook it and put it into the cartons. It sells, or used to, for 15 cents a package, or about 10 to 15 times the first cost without the advertising.

Let us take something with which I am even more familiar—patent medicines. I assert positively, and I can prove that the average patent medicine which costs the customer $1.00 does not cost the manufacturer 10 cents, advertising and all after the business is established, and there are some medicines which allow a still larger margin, as pills and some of the dry "teas."

How much, think you, do these firms pay for advertising? I was once informed that a now famous patent medicine concern had paid out half a million dollars in advertising *before the ground was broken for their buildings*, and I believed it, for the papers were full of their pictures long before I had a bottle of the stuff on my shelves.

Where is the margin of profits to enable the bee-man to pay out much for advertising in his own locality, let alone joining in a national scheme? "Corn syrup" is possible, because they can sell it for something like $2.75 the hundred pounds, and make a *clear* profit that would make a bee-keeper dizzy with envy; but the amount of money necessary to erect and equip a "corn-swindle" plant would buy every hive of bees in the State of Iowa at a fair valuation. It takes money to make money. A profit of a cent a pound on millions of pounds is *big business*, while a profit of 5 cents a pound on the amount of honey per colony produced by the average bee-man will afford him a slim living unless he has several hundred colonies, knows how to handle them, and has good luck in having profitable seasons.

We have many things to overcome besides swarming, bad seasons and disease among bees. In the mind of the average person not a honey-producer *honey is a luxury*, and—call me traitor if you will—with section honey at 12½ to 25 cents a pound it would be to me, with my income. It *is* a luxury to the very large majority of the people of the United States, especially where there are children in the family. Declaring in an ad that "honey is cheap," does not make it so.

There are seasons when the honey crop is an almost total failure over a large area, and when the supply of an article is exhausted, one may as well pull down his advertising. No merchant would for a minute listen to any proposition in advertising where the supply was held up for 18 months at a time. In this connection, did you ever stop to think that the supply of corn iniquity, be it glucose or booze, is constant and unlimited?

There is, however, a way to bring our product to the attention of the world, and that is for each and every bee-keeper in the country to study advertising and become an ad writer, and it is not necessary for him to take a mail course, either. Let him briefly and plainly tell his customers what he has to sell.

1. Don't quote prices unless you are obliged to, or unless you are offering a bargain.
2. Don't lie, for your mendacious chickens will come home to roost to your sorrow and shame.
3. Don't forget that brevity is the soul of wit in nothing more than advertising.
4. Don't brag about your output, for some one may not believe you, and every one despises a liar.

These are a few negative hints about advertising, and here follow a few suggestions. Shall I commence with

PURE HONEY

It should be enough to the average person that honey is in the comb; but while that old canard about artificial comb honey is perhaps exploded, there is a hereditary distrust in the minds of the present generation that there is a possibility of adulteration in even the snowy comb. Fortunately we have an irrefutable argument in the Pure Food Law, and it should be worked to a finish. So let us add to our ad

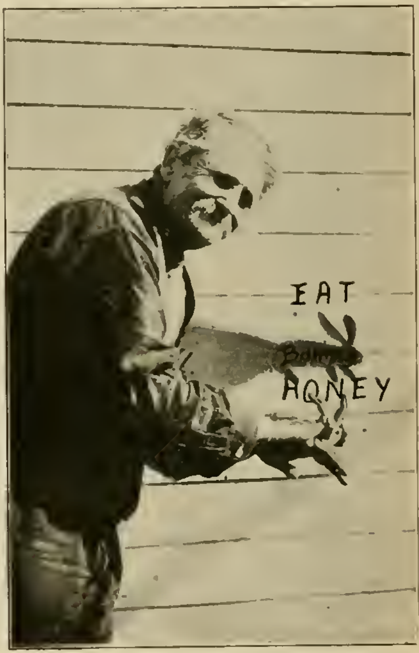
PURE HONEY
Guaranteed Under Pure Food Law
from the
Italian Bee-Apiary, Beetown, Iowa

Do I hear some one say: "That is nothing but a label!" Well, what is a label but an ad? Admitting the impeachment, let us see what we can add to the ad to make it more attractive, more enticing, more *pulling*.

Most persons, in writing an ad, think that they must use up every available inch of space for words. If you will observe advertisements in expensive mediums, you will see that there is vastly more white paper than reading matter, possibly one part of black to 10 of white, and they are paying probably $500 for the page. Why is this? Because very few persons will read a long ad unless they are mightily interested, and, let me grieve, it is hard to get people intensely interested in so common a thing as honey. They know what it is, where it may be bought, the price, and if their appetite craves it they will buy; all we can hope to do is call their attention to it at a time when we can supply a demand.

As the bees in the United States are credited with an output of $25,000,000 annually, which is but about 25 cents per capita, the *National demand must surely exceed the supply*. With a commodity so well known *the fewer words you use in advertising the better*. That is a cold *fact*. In many cases *you need but the one word* HONEY, but, that one word *must be over a display of* FINE *honey* in a store window. I have advertised here in that way for a long time, making and giving to the store-keeper a case with a glass front to hold 100 pounds (sections), and the word HONEY in black letters 4 inches high on a board and 6 inches wide on top of the case. Later I got up some postal cards which I sent to the farmers adjacent to town, making them myself.

A cut of some kind adds to the attractiveness of an ad, and there is nothing more appropriate to a bee than a bee or a hive, or both, and in the way of a hive nothing is better than a skep. It is more poetical, but other pictures into which bees come are all right, and I will add some outline suggestions. I have lost my skill with the pencil from 30 years of idleness.



Advertise Your Honey

I recently read that farmers should be expected to buy by the 60-pound can! There is not one man in a hundred who will, the country over, buy in such large quantities any more than they will buy sugar by the sack. Not as much so, for honey is a luxury. Here, in one of the richest portions of the United States, my customers buy almost entirely in 10-pound pails.

WE WILL PAY
$1.00 A DROP FOR
Every Drop of Adulterated
HONEY
Offered for Sale in this Store

In this ad the words, "We will pay $1.00 a drop for honey," to be in large letters; the other, "Every drop of adulterated," in small. "Know what you want to say, then say it," is a good rule in literature, and a *good one in advertising*.

I here append a hint for a good, short, circular letter. I should have it in type imitation, and paper the size of letter paper, 8½x11 inches, and allow 1½-inch margin on the sides, at least. Two or three cuts of bees scattered on the margin would help to attract attention.

> *PURE HONEY*
>
> *from the*
>
> ITALIAN BEE-APIARY—BEE TOWN, IOWA.
>
> When I say "PURE HONEY," I mean that it is honey gathered by the bees, stored by the bees, and ripened in the hive by the bees; and its purity is assured by the *Pure Food Law*.
>
> More than this, however, it is WHITE CLOVER HONEY, and that is the best that can be said of honey. There are other good honeys for those who are *not* critical; but for nice people, persons of refinement and taste, the clover honey is the only one which *exactly* fills the bill.
>
> I have it in sections as well as 10, 30, and 60 pound pails. A. B. BEE,
> *the Bee-Man.*

I am dealing with local advertising entirely, and I honestly believe that this is the only kind that will pay the average producer, the man who has from 500 to 1000, or, at most, 2000 pounds to sell, the man who sells all his honey to his neighbors, and, possibly, some of it through the stores. If he has more, and wants to find a new customer, a want ad in the bee-journals will do the business.

Everybody will read a one-word ad because they cannot help it. Therefore, the *fewer words you have in an ad the more readers you will get.* Why give them a history of your family? Why tell them how you produce your honey? Why abuse "Korn Syrup with a Kane flavor," which smells like a slop-bucket if you boil it? Why abuse your brother bee-men, if you have any? Take a sheet of paper and put on it what you are going to advertise. Honey; the kind; add some pleasant remarks; also a picture, and if you don't want your *mug* to be seen, put on it a picture of a bee or a skep.

Buck Grove, Iowa.

Apiarian Exhibit at the Spokane Interstate Fair

BY GEORGE W. YORK.

It was my good fortune to attend the 19th annual Interstate Fair held at Spokane, Wash., Sept. 30 to Oct. 6, 1912. Taken both as a whole and departmentally, it was one of the very best Fairs I ever attended.

But what will specially interest readers of the American Bee Journal are the exhibits of bees, honey, and beeswax illustrated herewith. They were located in a very good place, so that no one could miss seeing the display.

There were seven exhibitors—all from Washington, I believe. The total amount of cash premiums offered was $165. Prof. H. F. Wilson, of the Oregon Agricultural College, was the judge. Mr. L. C. Barrett, of Spokane, was the courteous superintendent of the Apiary Department.

At least two of the exhibitors at this Fair deserve special mention. They are Mr. J. P. Kingsland and Mr. Robt. Cissna. The former, who is an enthusiastic city bee-keeper, spent considerable time in securing a variety of exhibits for the Apiarian Department, and the latter, who is a specialist bee-keeper, and runs a half-dozen apiaries, had by far the largest quantity on exhibition, and probably came the farthest to the Fair. He sold all his honey to an enterprising local firm in Spokane before the Fair closed.

An excellent start has been made in the exhibits of the Apiary Department. But it will be necessary to offer more cash premiums before many bee-keepers can afford the work and trouble of making an exhibit worthy of three large States like Washington, Oregon and Idaho. No doubt the Fair management will increase the number of premiums as well as the cash amounts by another year, and thus attract more exhibitors from the ranks of bee-keepers in this part of the country.

Making apiarian exhibits at Fairs is one of the very best methods of advertising for bee-keepers. There is always a crowd of interested people where live bees are exhibited, and to have their product in large amounts beside the bees is a very effective way to impress people with the importance of the business. It has always been a surprise to me that Fairs do not encourage bee-keepers and bee-keeping more, by giving greater prominence to products of the apiary.

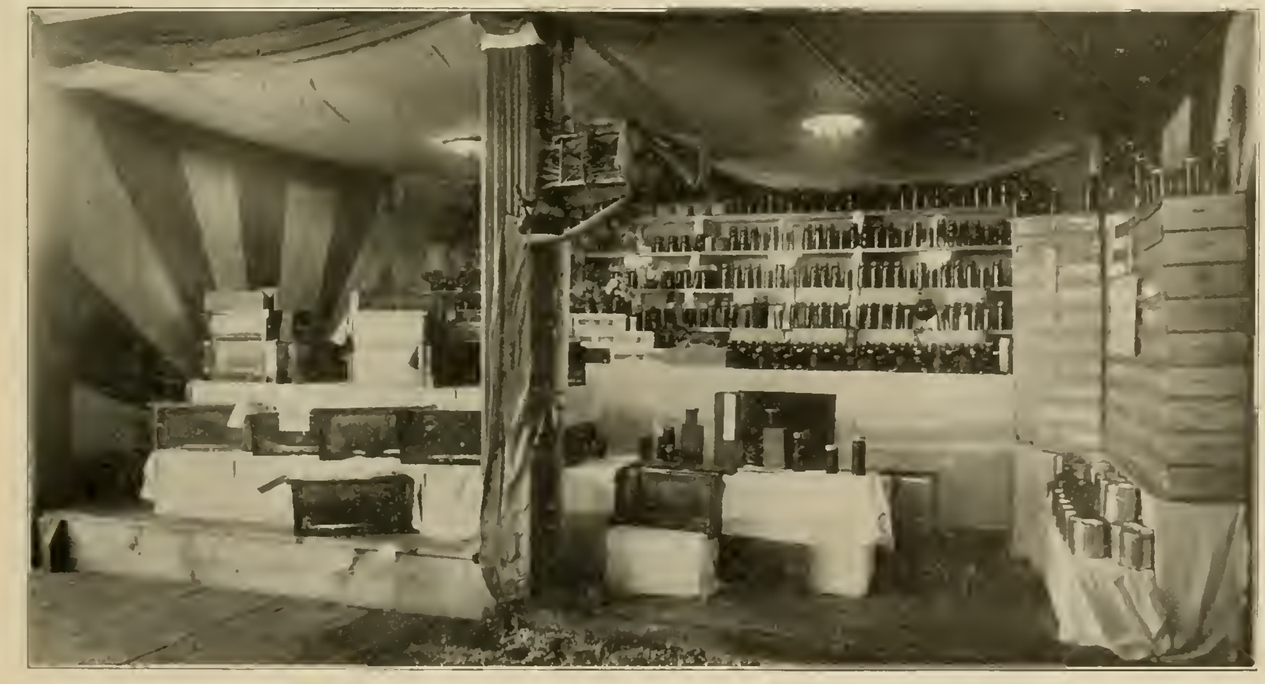
Sandpoint, Idaho.

[The above letter was received with accompanying picture and a list of the prize winners, that would be too lengthy for our columns. A private letter from Mr. York said: "I am tanned very nicely, as I have been out-of-doors all summer." Idaho life evidently agrees with him.—EDITOR.]

Two Recipes Worth Trying

COCOANUT PUFFS—Heat two cupfuls of granulated sugar with one-half cupful of cream, and add one-fourth cupful of honey. Boil until the ball will form in cold water; then remove, and beat a half cupful of grated cocoanut into it. Beat until creamy, and drop from the end of a small silver spoon on oiled paper.

PINEAPPLE DROPS—Boil two cupfuls of sugar with one cupful of milk and



VIEW OF THE BEE AND HONEY EXHIBIT AT THE SPOKANE INTERSTATE FAIR.

one-fourth cupful of honey. Boil until a ball will form in water, and then beat the stiff white of an egg into it. Add one cupful of chopped canned pineapple, and drop on oiled paper when it becomes firm. Press a black walnut-meat on each drop.—*Woman's Home Companion.*

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

What Becomes of the Drone?

The October number of the American Bee Journal has just reached us, and the writer has read the article entitled, "What Becomes of the Drones?"

This is a question that is most opportune, for I have never heard any explanation other than that the worker stung the drone so that it might die when the season for gathering honey had come to a close; but your reasoning appeals to my sense of Nature's method of disposing of them by a less radical method, viz., the refusal of the workers to longer feed them the kind of food which they are able to assimilate or subsist upon. Naturally, starvation would be the result.

Not being a practical bee-keeper, I am at liberty to ask any kind of an irrelevant question. May they not be like the Japanese soldier who has served up to the time that his usefulness ceases and he commits hara-kiri? ILLINOIS.

ANSWER.—The answer to your question depends somewhat upon the meaning attached to the word "may," when you ask, "May they not be like the Japanese soldier?" It may be used to ask permission, as when a little chap in school I asked, "May I go out?" If used in that sense, I must answer decidedly "No." I can never give my consent to have a drone commit hara-kiri, and if ever any drone does such a thing I want it distinctly understood that it is entirely without my consent and advice, and I am in no way responsible for it.

But the word "may" may also have reference to the possibility of a thing. If used in that sense I must still answer "No."

Firstly, because most of the denizens of the hive are of the gentler sex, and the drone is too much of a gentleman to rip open his bowels in the presence of so many ladies.

Secondly, because he cannot rip without a ripper, and he has no ripper.

Bees and Strawberries—How to Get Started With Bees

1. What do bees really do for strawberries; just the same as on apples?

2. How is the best way to get started in early spring, by buying two or three nuclei or a pound of bees, and then later buy a good breeder of some reliable bee-keeper and requeen?

3. How long would it take to build up a nucleus to a good colony? INDIANA.

ANSWERS.—1. In some respects the work of bees on strawberry blossoms is the same as on apple blossoms; in some respects different. Apple blossoms are perfect; that is, each blossom has both stamens and pistils. Yet the stamens and pistils do not mature at the same time. Some varieties of strawberries have perfect blossoms, same as apples. If you should plant a whole acre with a single variety of this kind, and no other kind near, you would get a crop. Some varieties of strawberries have staminate, or male, blossoms. Under no circumstances will a blossom having only stamens produce fruit. Some varieties are pistillate, or female. Plant an acre of these, with no other variety near, and you will have no fruit. But if every fourth or fifth row can be staminate or perfect the pistillate varieties bear fine crops. But there must be insects to carry the pollen from the male to the female blossoms, and the bee leads all in this respect. Yet I must confess that generally I have not seen bees working on strawberry blossoms. Probably it isn't necessary for them to work on them every day to produce a crop.

2. It is hardly practicable for you to get started very early in the spring unless you can buy full colonies near at hand. Indeed, on the whole that is probably the best way, and afterward you can change the blood if it does not suit you. If you have to send off a distance, then the nucleus, or bees by the pound may be best. But instead of getting a nucleus and afterward getting a breeder to introduce to the nucleus, the safer way would be to get the breeder with the nucleus.

3. Under favorable circumstances a 3-frame nucleus may be a full colony within a month or six weeks.

Constructing Hives so the Honey Will Not Need to be Transported to the Upper Story

What do you think of a hive constructed something like this: Let the upper and lower half of the hive be separated by a solid board with only a small opening between the two. The entrance will be in the lowest corner of the upper half. Now the upper half will be brood-chamber until the queen finally goes down into the brood-chamber. Thus the upper half will contain the honey, which will not have to be moved up by the bees, as is usually the case in an ordinary hive. If necessary, an excluder can keep the queen in the lower story after she has once entered it. GERMANY.

ANSWER.—Every now and then some one has conceived something of this kind with the idea that it will save work for the bees if they are allowed to go straight to the surplus chamber when they come from the field. But it does not work out in practice, as you will probably find if you try it; and I should advise you not to try it on more than a single colony. The pollen would most likely be stored in the upper chamber, and then laboriously carried down as needed by the nurses, making a great deal of extra work. I very much doubt if it is desirable to save the bees the work of carrying the honey from the lower story to the upper. That carrying is very likely a part of the process of ripening the honey.

Maples as a Source of Honey—What Strain of Bees Winter Best?

1. What do you think of a locality from 1000 to 2000 feet above sea level where there is a large quantity of maple sugar produced every year. Would you consider it a good locality for bee-keeping?

2. Do you prefer queens of northern breeding to those from the South? Are queens from the State of Louisiana, or from any other part of the South, considered poor wintering stock?

What is the use of getting queens from the South to make up winter losses if they winter poorly here in the North? NEW YORK.

ANSWERS.—1. The maple is a valuable honey-tree. It comes early, however, and the honey secured from it is mostly used in brood-rearing. The field-force is not yet strong enough to gather much more than will supply the daily needs of the colony. So while it is of value in securing a strong force of bees, the question whether the locality is a good one depends upon what comes later. If there are plenty of later sources the maple will be a great help; if nothing comes after, there is little prospect of surplus.

2. There is very little complaint of queens shipped from the South being unable to stand rigorous winters in the North. In fact, most northern bee-keepers buy southern queens, owing to the fact that they can be gotten earlier from the South.

Making Increase

I intend to buy queens in the spring, from May 25 to June 15, and intend to increase by taking a frame or two from the old hive with old queen, and place the same in a new hive on the old stand. I will fill the hive with frames with full sheets of foundation.

Now the old hive on a new stand will be queenless. To this I will introduce a queen. That queen should be readily accepted, as all the old bees will have returned to their original queen on the old stand.

Do you advise this method of increase? If not, please give your way of doing it.
NEW YORK.

ANSWER.—Your plan will work all right.

What Causes Wingless Bees?

1. What resinous substance is used on cement-coated nails?

2. Some young bees of most of my colonies were born without wings about July of this year. The hives had been raised a little for ventilation. Do you think they became

ONE OF JESSE H. ROBERTS' WINTER SHEDS AT WATSEKA, ILL.—MR. ROBERTS ON THE LEFT chilled, or were this way because the feeding had been neglected, since there was not much nectar being gathered? The hives, especially some, contained considerable honey. CALIFORNIA.

ANSWERS.—1. I don't know. (Rosin.—ED.
2. I must confess that this, too, is a little too hard a nut for me to crack. It hardly seems likely that the trouble came from the brood being chilled. I would rather guess it came from the heat before the hives were raised. Possibly it might be the effect of wax-worms.

Wintering Bees Near a Boiler

I have a cellar with a steam boiler in it. I can put the hives at one side about 20 feet away, can give plenty of fresh air.

How shall I fix the hives on top of the frames under the covers; will burlap do or do they need some chaff on top? I could put them near the boiler if it would be better. I can't find any one who ever wintered bees in a cellar where there was a heater.
NEW YORK.

ANSWER.—Very likely you will find that you can winter bees all the better for a heater in your cellar. At any rate I would rather not be without a furnace in my cellar after an experience of 10 years with one. If you have lots and lots of fresh air the bees will do well even if you cannot keep the temperature below 50 degrees. It matters little, while the bees are in the cellar, whether they are covered with burlap or chaff, or have sealed board covers directly over the top-bars, or have no covers at all, with the top entirely open. Only, if they are closed on top there must be plenty of opening below. I have sealed covers, just as they were on summer stands, with 2 inches of space under the bottom-bars, and entrance the full width of the hive. If your entrance is small, then there must be ventilation above. It doesn't matter whether that top ventilation be made by allowing the air to pass out through chaff or burlap, or merely by shoving the cover forward so as to leave ½-inch space at the back end.

How to Keep Ants Out of Honey

How can I keep ants out of honey after it is taken off the hive? I took off some, and a few days later, when looking it over, I found it was covered with big, black ants.
ARKANSAS.

ANSWER.—Make a platform resting on four feet, these feet standing in old cans in which to keep water or oil. If you can trace the ants to their nests, punch a hole into the nest with a crowbar, pour in carbon bisulphide, and quickly cover over. But be careful no fire is near or there will be an explosion.

REPORTS AND EXPERIENCES

Kansas State Fair Exhibit

The Kansas State Fair held at Topeka last month was a grand success in every way, but especially so in the bee-keeping department. J. P. Lucas, the manager, had taken a great deal of pains collecting different kinds of honey, and this exhibit was quite a drawing card for many people, even some of the bee-keepers had no idea of the variety of honey that the bees could gather from different sources.

Orange honey had been sent by P. C. Chadwick, of Redland, Calif.; cotton and tupelo gum by J. J. Wilder, of Cordele, Ga.; basswood by the A. I. Root Co., hearts-ease and sweet clover from Nebraska; six kinds of white sage from 1910 crop, which had never candied, from A Vogeler, of Oakland, Calif.; one kind from Fruitvale, Calif.; the lower part of the jar was light and clear, and the upper part was candied and almost as white as snow. Fine gum-tree comb honey, a sample of 1901 crop, which was a lemon yellow and very heavy, was exhibited. Then there was manzanola, light orange honey from the South, which was very firm; also sage comb honey, white clover, alfalfa, smartweed, Spanish-needle, and yellow clover from Kansas.

The department manager says that an other year he wants to make a larger showing of the different varieties, and would be pleased if any one having any other kind would send him a sample.

Another attraction was the different things put up in honey. Mr. Lucas had peaches, apples, plums, pears, tomatoes and corn put up in jars with honey. Some of these had been put up three years, and they were as fresh and as good as those that had been put up this year.

This goes to show what can be and is being done with honey. Let all the bee-keepers help the good cause along.
A BEE-KEEPER.

Bee-Keeping in Oregon

Bee-keeping is a new industry in this locality. Very few bees are kept, and they are mostly of poor stock and poorly managed. Many people do not know the value of bees as fertilizers, of the thousands of acres of fruit-trees which are in blossom here in the spring. We need more bees here—many more.

I made an exhibit at our County Fair of all kinds of bee-supplies, honey, both comb and extracted, etc. But the part of the exhibit which was the most valuable and the most interesting to the observer was the live bee-exhibit. I had a full colony in a wire-cage, and showed the people how easily bees can be handled, or, rather, how they should be handled; movable combs, queen-cells, queen, drones, etc., were shown. My exhibit was near the entrance of the building, and people blockaded the entrance in their effort to see the bees and hear the lecture.

I got more orders for full colonies and nuclei than I had in my apiary. Of course, this is not a great bee-country, but it is a country in which the bee is indispensable. All you have to do is to show the fruit-growers that this is true, and they are willing to start an apiary even though they do not realize any direct returns from the bees themselves. JOHN PASHEK.
The Dalles, Oreg.

Cleomella Angustifolia. Plant

I notice a honey-plant here that is entirely new to me, and no one here could give me a name for it, so I sent it to Washington, D. C., for identification, and they call it *Cleomella angustifolia.*

It seems to be a remarkable honey-plant. It was in bloom for more than 10 weeks during the dry season, and bees worked on it freely every morning. The blossom is very fragrant, sweet, yellow, and is at the tips of the branches. It keeps crowding out a new growth and blooming, forming small purse-shaped seed pods as the blossoms drop. The growth is much like sweet clover or yellow mustard, but forming a larger spreading top. Some plants grow 4 feet tall and 3 feet across, and an inch through at the butt, and very hard. It is an annual, and no stock of any kind will eat it. There is but little of it here, but it is spreading quite rapidly.
M. S. HUBBELL.
Helena, Okla., Oct. 15.

The Situation in Oregon

I noticed in the October American Bee Journal, page 311, this question; "Who is Inspector?" Kindly advise the Oregonian, who asked the question, to get in touch with Prof. D. F. Wilson, O. A. C., Corvallis, Oreg. The Professor is Secretary of the Oregon State Bee-Keepers' Association.

The Association had a bill before the Legislature in 1911. It was passed by both houses, but vetoed by the Governor. We are preparing a new bill, and it was sent to me by the Secretary a few days ago for inspection. (I am one of the Directors.) It is very similar to the other one, but I am sure the Governor will not veto it this time; therefore, we must now try to influence the Senate and House. A good many of the men are new there now.
HERMAN AHLERS.
Necanium, Oreg., Nov. 6.

New Method of Transferring

Is this method new? To transfer from box-hives, nail a queen-excluder on the bottom of an empty super, cut the brood out and put it all edgewise in the super. Place this on a hive containing one or two frames of brood, the balance of the frames full sheets of foundation or drawn combs, with the bees and the queen. I transferred 50 or more in this way the past summer, sometimes putting 2 colonies in one hive. It worked all right. When the brood is all hatched, melt up the old combs. The American Bee Journal is surely fine.
Liberty, Mo. J. F. DIEMER.

[This is certainly a sure way of transferring. The only trouble is to have enough frames of brood in readiness.—EDITOR.]

Description of a Bee-Shed

I have built a bee-house in which to keep my bees, built in the form of a shed. It is 22 feet long, 5 feet high at the back, and 7 at the front, and faces the south. It is covered with Atlas roofing, and has a 2-foot canopy in front with shelf upon which I can place light swarms in the spring, so as to easily feed them. The house will hold 42 colonies, all told. The front is left open so that the bees can take a flight every warm day. I noticed this year that all bees kept in houses came through the winter alive and strong. My hives are all packed with forest leaves between and behind them, and forest leaves in the caps. JESSE H. ROBERTS.
Watseka, Ill.

[We prefer the shed with only one slope to the one with two slopes, as the former gives more sun to the bees in winter.—ED.]

Another Late Swarm

In recent issues of the American Bee Journal Mr. Byer and Mr. Eastman have told us about late swarms of bees. I had a large swarm in the early part of September. The swarm was hived in a hive filled partly with empty drawn combs and with combs of honey taken from extracting supers. The swarm was too large for one hive-body, and I gave it another filled the same as the first. Lately I confined the colony to one hive-body for wintering, and will give it all the feed it needs.

If I had Mr. Eastman's October swarm I would not let it perish. EDWIN BEVINS.
Leon, Iowa, Nov. 12.

Hopes for Bumper Crop in 1913

My report is very poor. Before my sickness I had 95 colonies of bees in fine shape, but last spring they dwindled down to 37, in very weak condition, but they have built up nicely this season. I have now 45 colonies in fine shape for winter, all of good stock and I have about 2000 pounds of surplus honey. So you see they did well in a poor season, and I hope for a bumper crop in 1913. White and alsike clovers, also sweet, look fine for a crop next season.
Matteson, Ill. A. P. WICHERTS.

An Ontario Report

The season is backward, and I am not through feeding yet. I will be at it a week or 10 days longer. Of 725 colonies over 500 are in shape for wintering, in so far as the stores are concerned; so with anything like fair weather I will soon clean up the bunch. My feeding bill is not as heavy as anticipated, as 6000 pounds will put all the bees in good condition. Of course, I mean the amount of sugar, not syrup. J. L. BYER
Mt. Joy, Ont., Oct. 9.

Looking for Big Things in Vermont

Mr. I. E. Crane, of Vermont, the prominent bee-keeper and inspector, called to see me a short time ago. He said he believed that whoever had bees in good condition next spring would get the largest crop of honey

they ever got. There certainly never was such a lot of clover, both alsike and white, and it doesn't seem possible that bees could go into winter quarters in better condition than just now. Hives are well filled with young bees. Mr, Crane is not the only bee-keeper in this section who expects a bumper crop next year. G. W. FASSETT.
Middlebury, Vt., Nov. 4.

Enjoys the Journal

I enjoy the American Bee Journal immensely. F. DUNDAS TODD.
Victoria, B. C., Oct. 22.

Has 50 Colonies and Good Crop

I have kept 50 colonies of bees for ten years with success, getting from 500 to 2000 pounds per year. This county is not one of tho best in the State for honey. I live 11 miles from the famous Natural Bridge.
EDWARD SULLIVAN,
Buena Vista, Va., Oct. 3.

Extra Good Report for Iowa

My full report for 1912 is 1500 pounds of extracted honey from 0 colonies, spring count, and increased to 14 by natural swarming. I took off the surplus arrangement the last week in August and gave them a chance to fill up for winter. They are now well supplied with honey. FRED BECHLY.
Searsboro, Iowa, Oct. 24.

Clover Looks Fine

White clover looks as fine as I ever saw it in the fall. I have 37 colonies of bees in fine shape for winter. JOHN G. NORTON.
Macomb, Ill., Oct. 24.

ANOTHER WINTER SHED OF MR. ROBERTS.

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New Jersey Association to Meet

The New Jersey branch of the National Bee-Keepers' Association will hold their annual meeting in the Entomological Building at New Brunswick, N. J., on Friday, Dec. 20, 1912.

PROGRAM—MORNING SESSION.

10;30 a.m.—Address by President, J. H. M. Cook, of Essex Falls.

"Gentle Bees"—Penn G. Snyder, of Swarthmore, Pa.

"Judging Bees"—Harold Hornor, of Philadelphia.

Question-Box.

AFTERNOON SESSION.

1:00 p.m.—"The Hive in Winter"—Dr. C. D. Cheney, of Hoboken.

"The Relation of the State Entomologist to the Bee-Keeper"—Dr. T. J. Headlee, of New Brunswick.

"Bee Behavior," illustrated with slides, Dr. E. F. Phillips, of Washington, D. C.

"Management for Comb Honey"—W. Housel, Hampton.

"The Future of New Jersey Bee-Keeping"—E. G. Carr, of New Egypt.

Election of officers for 1913.

Election of delegate to the National convention at Cincinnati Feb. 12 and 13.

Election of a representative to the State Board of Agriculture, at Trenton, Jan. 7, 8, 9 and 10, 1913.

E. G. CARR, *Sec.*

J. H. M. COOK, *Pres.*

New England Bee-Keepers Please Notice

A convention of bee-keepers of Southern New England will be held in Arcanium Hall, 152 Weybosset Street, Providence, R. I., Saturday, Dec. 7, 1912, 2:30 p.m. and 8 p.m.

Dr. E. F. Phillips, of Washington, D. C., is to address both sessions.

ARTHUR C. MILLER, *Sec.*

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

FOR SALE—100 colonies of bees, good condition. W. F. Stuart. Garden City Kans.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
Robert Inghram, Sycamore, Pa.

QUEENS — Italians and Carniolans. Will exchange choice queens for bees by the pound, frame, or hive. Write, stating what you have, Frank M. Keith,
3Atf 83½ Florence St., Worcester, Mass.

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FOR SALE—A full line of Bee-Keepers' Supplies. Agents' prices. Save freight.
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FOR SALE—Empty second-hand 60-lb. cans, two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
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ALUMINUM HIVE NUMBERS 1⅛ in. high, 2c each figure; 50 or more, 1½c, postpaid, including brass nails. Henry Benke,
Pleasantville Sta., N. Y.

ORDER IDEAL winter-cases now, and take advantage of 10 percent discount until Dec. 15, 1912. R. H. Schmidt.
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BEE-SUPPLIES.—When in need of any, write me for prices before buying elsewhere. One story 8-frame hive with double cover, $1.00 each; 1½ story, $1.35 in flat, f. o. b. Wallace, N. Y. M. C. Silsbee,
12A1t Rt. 3, Cohocton, N. Y.

HONEY

WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken,
265 Greenwich St. New York City.

HONEY FOR SALE—Clover honey of the finest quality in new 60-lb. cans at 9 cts. per pound. 8Atf J. P. Moore, Morgan, Ky.

CHOICEST THICK RIPE CLOVER HONEY in full-weight 60-lb. cans at 11c per pound. Sample mailed for 8c. E. W. Brown,
10Atf Box 17, Willow Springs, Ill.

FANCY and No. 1 white-clover honey $3.50 and $3.35 per case of 24 sections, six cases to carrier. Robert Gilbert,
11A2t White Bear Lake, Minn.

FOR SALE.—Water White Alfalfa, Light Amber Alfalfa, and Amber Fall Honey from our own apiaries. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale.—1½ carloads of choice sage honey by the can or case. Samples of honey and desirable California souvenir free for a stamp. C. W. Dayton, Chatsworth, Calif.

MISCELLANEOUS

Colorado Bee-Keepers' Directory is ready. Join the Association ($1.00), and ask for copy. Wesley Foster, Boulder, Colo.

Make Pure, delicious fruit acids from honey. Cures all diseases, man or beast. Patent allowed. Mailed, 25 cents.
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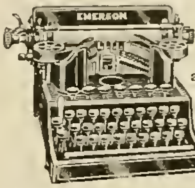

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HONEY AND BEESWAX

CHICAGO, Nov. 18.—Sales of honey during November, up to this writing, have been of large volume, and yet the market is well supplied. Prices on No. 1 white comb range from 15@16c per lb.; A No. 1 to fancy, 17@18c per lb.; No. 2 white, 10@12c per lb.; No. 1 to fancy amber, 13@15c per lb. Dark and out of condition lots difficult to place at 9@10c per lb. Extracted honey in new cans and cases, white clover and linden, brings from 9@10c per lb. Amber grades, 7@8c per lb. Beeswax, 30@32c per lb.

R. A. BURNETT & CO.

INDIANAPOLIS, Nov. 16.—Fancy white sells at 18c in 10-case lots; No. 1 white 1c less; amber comb is in slow demand and at lower figures. Best extracted sells at 11@12c in 5-gallon cans. There is an excessive demand for comb honey, but very little is now being offered by producers, and it is surmised that some are holding for higher prices, but at higher prices the demand would cease. Beeswax is in good demand, and producers are being paid 30c per lb,

WALTER S. POUDER.

LOS ANGELES. Nov. 15.—There is only a small quantity of honey on the Coast unsold, but it should move out rapidly, as it can be bought at very reasonable prices, considering that the market is bare of white and water-white sage honey. We quote: Light amber sage, 6¼c per lb.: light amber alfalfa, 6c per lb.; white to water-white alfalfa, 7@7¼c per lb, All f. o b. Coast, dollar freight rate by rail.

Light amber sage, 6½@6¾c per lb.; f. o. b. Steamer San Diego, with 60c freight rate to New York. Honey has been moving forward steadily, and the indications are that stocks will be practically exhausted long before any new honey is available.

HAMILTON & MENDERSON.

CINCINNATI, Nov. 22.—It seems that fruit and preserves have full sway of the market at the present time, owing to the low prices of these commodities, thus making the demand for honey suffer. However, we are selling fancy comb honey at $3.75@$4 00 a case. Our best grade of extracted honey in 60-lb. cans we are selling at 8½@10c a lb., and amber honey in barrels at 6½@8c, according to the quality and quantity purchased. For choice, bright yellow beeswax we are today paying 28c a pound delivered here.

THE FRED W. MUTH CO.

KANSAS CITY, MO., Nov. 18.—The supply of both comb and extracted honey is large; the demand fair. We quote: No. 1 white comb, 24 section cases, $3 25; No. 2, $3.00; No. 1 amber, $3.00; No. 2, $2 75. Extracted, white, per lb., 8½@9c. Beeswax, 25@28c.

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BOSTON, Nov. 22.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

SAN FRANCISCO, Nov. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per lb; amber, 6@7½c; lower grades, 5@6c. Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. JOHN C. FROHLIGER.

CINCINNATI, Nov. 18.—The demand for comb and extracted honey is fair, with a good supply. No. 1 white comb honey selling in large lots at $3.60 per case, 24 sections; there is no demand for off grades. White extracted honey in 60-lb. cans is selling from 9½@10c. Light amber in barrels from 7@7½c; in 60-lb. cans from 8@8½c. Beeswax in fair demand, selling at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

NEW YORK, Nov. 18.—Comb honey keeps in fair demand for all grades at unchanging prices. The various grades of white honey are still coming in, while buckwheat seems to be extremely short. Extracted honey is in fair demand, with suffiient supplies of all grades except California white sage, which seems to be scarce this season. Prices run the same. Beeswax quiet at 30@31c.

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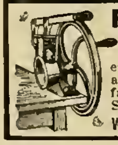

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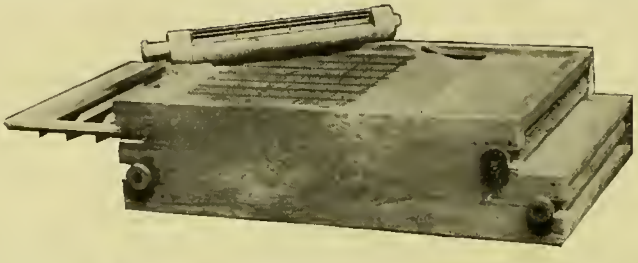

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